structure Accounting Unit which by definition retains its real value. Thus, the U.S. commitment rises in terms of dollars as the dollar falls in relation to other NATO currencies.

RECOUPMENTS FROM PREFINANCED PROJECTS

Question. What is the current amount of prefinanced projects which have not yet been recouped?

Answer. As of the most recent Prefinancing and Recoupment Report of September 30, 1979, there is potentially recoupable $413 million. Of this amount over $200 million has been included in NATO approved slices through slice 31.

Question. Last year, you indicated that you expected $100 million worth of project recoupments in Slice XXXI. Will you attain that?

Answer. Within Slice 31, which was approved April 25, 1980, there is over $100 million in recoupment for prefinanced projects. Recoupments will be received for all the work that has been completed in accordance with NATO criteria. This is considered to be most of the amount that is programmed for recoupment. For those prefinanced projects which are not complete at the time of NATO authorizations, the amount of recoupment will be reduced by the cost to complete the project which would then be directly funded by NATO rather than using U.S. military construction funds.

Question. What do you anticipate in terms of recoupments for Slice XXXII?

Answer. The SACEUR and SACLANT recommended programs for Slice 32 contain U.S. prefinanced projects totaling $26 million. This amount includes projects on which construction is not yet completed as well as some that are finished. In view of this situation it is anticipated that a portion of the prefinanced $26 million will not be returned to the United States as recoupment but will instead be a deobligation of U.S. Military Construction funds once the NATO funds are available. The relative amounts of deobligation/recoupment will depend upon the actual date of the NATO Defense Planning Committee gives the final slice approval.

Question. How are recoupments being handled when they are received—have all been credited back to the infrastructure account?

Answer. The basic policy has been to reallocate the funds to the Infrastructure Account in lieu of NOA (new obligation authority) within authorized TOA (total obligation authority). The one exception occurred in fiscal year 1979 when Congress decided that $20 M of recoupments should be credited to the MCA (Military Construction Army) account to provide for a portion of the prefinancing for 4th DE (Division Equivalent) of POMCUS.

NEW SYSTEMS

Question. On the theater nuclear level, we will be introducing the Pershing II and Ground Lanuched Cruise Missile (GLCMs) into Europe. What construction will be associated with the systems and when will the facilities be required?

Answer. For the GLCM we will have operational facilities such as shelters, maintenance buildings, storage igloos, security facilities, squadron operations building etc. for which we will look to NATO infrastructure for funding. We also will require base operations support facilities such as unaccompanied enlisted and officer personnel housing, dining halls, office space, clinics etc. which are a national responsibility and for which we will be requesting MILCON funds over the next four years. Our first package of facilities, those in the fiscal year 81 program, are required to be operational in mid 1983.

Pershing II was designed to use the same facilities as Pershing IA. However, many of the existing Pershing IA facilities in Europe are inadequate. Consequently, NATO Infrastructure funding has been requested for construction of some new facilities and for upgrading some existing facilities.

Question. The Air Force is prefinancing the first GLCM site, which will be in [deleted]. Why is prefinancing necessary?

Answer. We are looking at a very tight construction schedule to meet the initial operational capabiltiy in theater and the fiscal year 1981 MILCON program is the most responsive funding source. We are just too late in the cycle to include the work in NATO infrastructure slice 32 and the next slice, 33, to be funded in January 1982, would not allow sufficient construction time to meet the need date. We do intend to include this work in the NATO slice 33 program for recoupment.

Question. Are GLCM facilities currently infrastructure eligible or only expected to become infrastructure eligible?

Answer. The majority of the facilities required for this weapons system are ones which have already been accepted with infrastructure criteria such as security facilities, squadron operations, vehicle maintenance, munitions storage and maintenance and inspection facility. The one facility in particular for which eligibility is to be determined is the hardened shelter. As this item exceeds current criteria, the Air Force, over the next few months, will be presenting the justification to SHAPE for inclusion of the shelter in criteria.

Question. How will follow-on GLCM facilities be financed?

Answer. All NATO eligible facilities will be pursued through the Infrastructure program while national responsibility items will be submitted in the MILCON program.

Question. What is the schedule for GLCM deployment and what is the status of site selection?

Answer. On December 12, 1979 the NATO Ministers approved the modernization of long-range theater nuclear forces in which the United Kingdom, Federal Republic of Germany, Italy, Belgium and the Netherlands agreed to host the GLCM system; however, Belgium and the Netherlands have reserved the right to review their decision in six months and two years respectively. [Deleted.]

We have not determined a specific area in Italy for GLCM. We are in negotiations with the Ministry of Defense on basing but we have not conducted site surveys, nor have any final decisions been reached on the subject of basing in the Federal Republic of Germany or the United Kingdom.

Question. Will any costs of the Pershing II be borne by NATO?

Answer. The Federal Republic of Germany has indicated an interest in buying a short range version of Pershing II. If they elect to do so, they would pay a pro rata share of the RDTE costs associated with the system. Pershing II was designed to use the same facilities as Pershing IA. However, many of the existing Pershing IA facilities in Europe are inadequate. Consequently, NATO Infrastructure Funding has been requested for construction of some new facilities and for upgrading some existing facilities. Indications are that this request is being favorably considered by NATO.

Question. What is the schedule for deployment of PERSHING II?

Answer. Pershing II is an improved version of the Pershing IA system which is already fielded. Current plans call for fielding the first Pershing II battery (consisting of 9 launchers with a minimum of [deleted] missiles) in [deleted]. The remaining Pershing IA units will be converted to Pershing II by the end of [deleted].

Question. Are Pershing IIs likely to replace or be collocated with Hawks?

Answer. [Deleted.]

Question. On the conventional level, several new systems such as the A–10, the F–15 and the XM–1 are being or are about to be introduced into Europe. (A) What is the status of construction required to support these systems? (B) What is the fiscal year 1981 budget request for these systems? (C) Will there be any NATO contribution on these systems and their facilities?

Answer. (A) Construction to support the F–15s is essentially complete. Work required in support of the A–10 beddown at RAF Bentwaters/RAF Woodbridge and funded in fiscal year 1980 is just getting underway with the exception of the Bentwaters Simulator and the Woodbridge Dining Hall which are currently on hold because of Air Force funding problems. (B) No projects are included in the fiscal year 1981 budget request for these items. (C) NATO provided the majority of the funding required to beddown the F–15 ($17.165 million NATO, $2.907 million MILCON). For the A–10, NATO is providing operational facilities and airfield survivability measures (ASM) at the A–10 forward operating locations (FOL) (shelters, arm/disarm pads, ammo igloos, refueling vehicle shelters, pavement, fuel storage, squad ops, utilities etc.) at an estimated cost of $88.2 million while U.S. cost at Bentwaters/Woodbridge is estimated at $9 million.

For the Army: (A) There is one project for fiscal year 1980 MCA to construct hand off facilities for the XM–1. Those facilities are to be located in Vilseck, Germany. It was awarded in April 1980. (B) There are no fiscal year 1981 MCA Funds. (C) There will be no NATO contribution for these funds.

ASSAULT BREAKER PROGRAM

Question. **Several other conventional systems are under development—the assaultbreaker system to kill tanks, the ground support or multiple-launched rocket system and the position location strike system.**

(A) What is the anticipated deployment date for these systems?

(B) Are there any construction requirements associated with them?

(C) Will there be any NATO contribution on these systems or their facilities?

Answer. The Assault Breaker Program is currently a technology demonstration being managed by the Defense Advance Projects Research Agency (DARPA). The Army has not yet fully defined its requirement for Assault Breaker or how it will be pursued into development or fielding. Initial Army analysis indicates the earliest fielding of a joint capability based on technological and funding constraints is [deleted]. The Army has not conducted its concept definition effort; therefore, construction requirements have not been identified. The Army's current plan is to consider integrating the Assault Breaker delivery weapon into the current Lance missile system or its replacement system, the Corps Support Weapon System (CSWS). It is too early to identify possible NATO contributions.

The Multiple Launch Rocket System (MLRS) will begin deployment in [deleted]. Since MLRS is an add-on to the force there are some construction requirements for ammunition basic load storage facilities, troop barracks, and equipment and work facilities. These requirements obviously vary from location to location. The MLRS is being jointly developed by the United States, United Kingdom, France and Germany under the terms of a signed Memorandum of Understanding. The U.S. expects NATO to fund construction of MLRS ammunition storage facilities other than those for unit basic loads.

Question. Do you anticipate the introduction of systems other than those mentioned above which will require construction during the next several years?

Answer. There are several systems anticipated to be fielded in the next six to seven years which will require new construction. The PATRIOT will require both NATO and MCA funding. New construction for PERSHING is expected to be mostly NATO funded. Other systems requiring MCA funding for new construction include the Infantry/Cavalry Fighting Vehicle, 3×8 Field Artillery, DIVAD, ROLAND, BLACK HAWK, CH-47 Helicopter, Flight Simulators, Remotely Piloted Vehicle, and various electronic warfare systems.

Navy has already programmed both Infrastructure (Slice 29, Hangar Addition) and Military Construction (FY 80, NAF Sigonella, Aircraft Maintenance Hangar) supporting the introduction of new CH-53E helicopters into Sigonella in fiscal year 1982. Navy's fiscal year 1982 Military Construction request will contain additional aircraft maintenance and personnel support projects that are in part associated with the CH-53E introduction.

Navy will request Infrastructure projects in Slice 35 to support introduction of the new patrol hydrofoil ship (PHM) into the Mediterranean area.

The Air Force TR-1 system will be introduced in the near future.

NATO 5-YEAR PLAN

Question. Calendar year 1980 (Slice XXXI) represents the first year of the current NATO five-year plan. What are the principal construction projects in this five-year plan?

Answer. The principal U.S. projects included in Slice 31 as well as projected for inclusion in future slices of the current NATO Slice Group are those in the Reinforcement Support Category (POMCUS Division Equivalents, Ammunition Storage, Theater Reserve facilities), Airfield Survivability Measures, and facilities in support of new weapon systems such as GLCM, Patriot, Pershing II, etc. In addition, there are multi-nation and other than U.S. e.g., European pipeline projects and aircraft early warning installations.

Question. Is this plan consistent with the long term defense program (LTDP)?

Answer. The plan is in agreement with the LTDP, however, the two are not identical. The major NATO Commanders (SACEUR and SACLANT) continuously review slice requirements, the result of these reviews is often a reordering of priorities and the requirement for new items. This is true in the area of facilities. Consequently, certain recent requirements are not totally covered in the infrastructure related requirements as reflected in the LTDP.

Question. Is the five-year plan either more or less ambitious than the LTDP?

Answer. The five-year plan is somewhat more ambitious than the LTDP in several areas and this holds true for infrastructure requirements as well. Recent programs are not totally reflected in the LTDP in terms of infrastructure since they had not progressed to the construction planning stage at the time of the LTDP development. Facilities for GLCM are a prime example.

Question. What is the total estimated cost of the five-year plan?

Answer. The current total cost of the Slice Group is $4.72 billion, but an increase at the mid-term of the Group is being pursued by the United States and other allied nations.

Question. What contributions have been made to date by all NATO members?

Answer. No contributions toward the five year program have been made by any of the allies, since the first year (slice 31) was only approved April 25, 1980. As projects are authorized, the existing cost share formula for which the United States is committed to 27.4 will be used.

Question. What contributions are anticipated in calendar year 1981:

Answer. The majority of the contributions for this slice group will be made, starting in fiscal year 1981 for which the U.S. requirement will be $300 million. Some of these funds will be used for projects approved in prior year slices, now contained in the backlog, but for which authorization will be requested in fiscal year 1981. As mentioned earlier, some projects that have NATO documentation essentially complete, and are included in Slice 31 (4th Division Equivalent POMCUS, Theater Reserve Facilities in Luxembourg) are scheduled to be authorized in FY 1980. The exact contribution by project for each year cannot be determined, as this is a function of the host nation's ability to process the necessary NATO documents requesting project authorization. Each country, however, is committed to their share of the Infrastructure program based on prior approval of the Slice Group in May 1979.

Question. On the basis of current and anticipated commitments do you expect the entire five-year plan to be carried out on schedule?

Answer. There is no indication from the host nations that the established IOC's (Initial Operational Capability) dates cannot be met for the projects now contained in slice 31 and those envisioned in the remainder of the slice group. To be successful for all major projects, it will be necessary to obtain approval of a significant increase in the slice group at the mid-term. The major NATO Commanders and the NATO community are currently attempting to establish the size of this increase that will be satisfactory to all members of the Alliance.

Question. On May 31, 1978, at the NATO Summit Meeting, the long-term defense program was agreed to. For the record, please review the objectives of the LTDP.

NATO LONG TERM DEFENSE PROGRAM

Answer. The objective of the LTDP is to assist NATO countries to meet the changing defense needs of the 1980s. Purpose is to make a major contribution to countering the trends in the military balance with the Warsaw Pact which, in the conventional arena, have been moving to NATO's disadvantage. It calls not only for greater efforts in a number of areas, but also for a more vigorous pursuit of the means for obtaining, through greater cooperation, the best return from the substantial national resources already made available or planned for the defense of the Alliance.

Further improvements are to be made to the readiness and combat capabilities of NATO's military forces and in the capability to reinforce those forces. The program calls for a series of detailed actions to improve NATO capabilities in such priority areas as: readiness, reinforcement, reserve mobilization, maritime posture, air defense, communications, command and control, electronic warfare, logistics ,rationalization, and theater nuclear forces. In all these areas particular emphasis is placed on cooperation between member countries.

Question. Please provide a status report on the LTDP.

Answer. During the past year NATO has moved forward on LTDP follow-through actions. The Alliance has improved its organization and procedures, provided additional personnel to military and civilian staffs to assist in LTDP implementation, and established agreed LTDP reporting procedures and monitors. Initial implementation of the LTDP measures has, in general, been satisfactory. For example:

Additions to and modernization of anti-armor weapons; increased antitank guided missile stocks; and provision of chemical warfare protective equipment.

U.S. and Allies commitment of nearly 600 merchant ships for reinforcement purposes.

Installation of point defense missile systems in large combatant ships and close-in weapon systems on smaller ships. Antisubmarine warfare has been enhanced by installing acoustic sensors and increasing stocks of torpedoes.

Movement into production of the NATO Airborne Early Warning and Control (AEW&C) program for NATO AWACS. Construction of the main operating base in Germany is in progress.

Continuing development of the NATO Integrated Communications System.

Implementation of the LTDP maritime and air warfare EW measures such as the provision of off-board chaff and infrared systems for ships, jamming equipment for major combatant ships, shipboard automatic threat alert receivers, and self-protection suits for new tactical aircraft.

Establishment of an Assistant Secretary General for Infrastructure, Logistics and Council Operations, and a new Director of Logistics and staff to improve coordination and management of Alliance logistics activities.

Establishing a logistics coordinating capability in Allied Forces Central Europe which, during wartime, will coordinate reception and onward movement of external reinforcements and resupply.

Initiation of a NATO Armament Planning Review (NAPR) to assess national equipment plans and identify areas of possible armaments cooperation, and testing of a new Periodic Armaments Planning System (PAPS) which should provide an improved framework for NATO-wide armaments cooperation.

In spite of the positive actions being taken on the LTDP measures as indicated above, performance must be accelerated if NATO is to meet the established mid-term goals. The U.S. is presently requesting the other NATO nations to increase their efforts.

Question. What construction projects have already resulted from the LTDP?

Answer. The following projects are included in Slice 31:

4th Division Equivalent POMCUS ($120 million) Luxembourg Theater Reserve Storage Facilities ($40 million) and Planning Funds for Ammunition Storage and Theater Reserve Storage ($25 million).

Question. What construction either specified or implied by the LTDP remains to be undertaken?

Answer. Some $250 million for 5th and 6th Division Equivalent POMCUS and numerous ammunition and TR-1 storage sites. There are other undefined projects in the Air Defense Communications and Command Control Information Systems areas.

Question. What is the status of the POMCUS program?

(A) What total program is now envisioned?
(B) What is the total projected cost?
(C) What is under construction—where and at what cost?
(D) What has been awarded?
(E) What appears in Slice XXXII?
(F) What remains to be done?

Answer. a. The Army POMCUS program for FY 81–85 consists of prepositioning the equipment of 6 division sets in Europe by end FY 82. 3 of the 6 division sets are currently in place and a fourth set is scheduled for completion by end FY 80. Each division set consists of a CONUS active division and minimum non-divisional support units.

The DoD five year program for FY 81–85 contains a requirement for [deleted].

b. The total *projected* cost in FY 81–85 to accomplish the POMCUS program is as follows (fiscal year 1980 dollars:)

Fiscal year:	*Millions*
1981	$96
1982	307
1983	207
1984	234
1985	288

The above funds are for operations, maintenance and transportation to ship, store, and maintain the POMCUS equipment and operate the sites.

c. As of March 31, 1980, $27.3 million of POMCUS facilities for Division Set (DS) 4 are under construction in Germany at Moenchengladbach and Herongen.

d. $48.8 million has been awarded to the FRG construction agency. Funds totaling $108 million which includes repayment of the $56 million fiscal year 1979 MCA project, were approved by NATO on April 25, 1980 for construction of all three sites for DS–4.

e. Slice 32 as recommended by SHAPE contains funds for the construction of DS–5 ($279 million).

f. The Army's proposed 5 year construction program would if funded by NATO provide facilities for additional POMCUS in the amount of $694.7 million.

Question. Last year, in addition to POMCUS, you mentioned ammunition storage, equipment storage, and fuel storage as the principal new requirements under the LTDP.

What is the status of each?

Please provide for each the same information as requested in (A) through (F) of the above question.

Answer. A goal of the LTDP is to obtain [deleted] days of bulk petroleum war reserve storage. For the U.S. Army this represents approximately [deleted] barrels. Current Army storage capabilities are [deleted] barrels.

The deficit of [deleted] barrels remains to be obtained. Headquarters, Allied Forces Central Europe, in coordination with the Central Europe Pipeline Office, has developed a draft Central Europe Pipeline System (CEPS) Improvement Plan which provides the framework to meet the increased fuel demand of NATO member nations through 1990. The plan increases the storage capacity of existing CEPS depots, establishes four new depots in the forward combat zone, and adds two large depots near Glons, Belgium and Fuerfeld, Germany. The additional storage will ensure that all CEPS users have a minimum of [deleted] combat days of fuel, and a capacity to sustain long term requirements. The plan is to be implemented in the 1980 to 1990 period with the majority of infrastructure costs falling in slices 33 and 34. Projected costs for the draft CEPS Improvement Plan are as yet undetermined. The Central Europe Pipeline Office is scheduled to meet during May 1980, to finalize the improvement plan.

The Army Ammunition program for Europe consists of prepositioning [deleted] short tons) in Europe by 1986 with a total stockage objective of [deleted] short tons. Approximately $97 million of ammunition storage facilities has been awarded and is under construction at seven sites in central and southern West Germany. $41.6 million is contained in SHAPE's Recommended Slice 32 and an additional $30.9 million in construction was deferred from Slice 31. If the Army's five year program is approved by NATO an additional $357.1 million will be provided.

The Army's program for Theater Reserve, less Ammo and POL storage consists of prepositioning storage of equipment and supplies. A $40 million project in Bettembourg, Luxembourg is under construction. Phase II of this project at Sanem ($26 million) is nearly ready for construction if NATO funds are available. Slice 32 contains only planning funds (design), however, a construction project for $10 million deferred from Slice 31 is a potential add on for Slice 32. The Army's five year program if approved by NATO will provide $201 million for Theatre Reserve storage construction.

The programmed costs for Ammunition and other theatre reserve less POL, for transportation and storage are as follows:

Fiscal year:	*Millions*
1982	$424.5
1983	449.6
1984	396.2
1985	416.7
1986	459.2

These figures are estimates only and are subject to change.

Question. What is the total value of Slice XXXII?

Answer. The current SACEUR approved Slice 32 program is approximately [deleted]; the SACLANT program has traditionally been an additional 10 percent of this. The program has been submitted to NATO for their review and approval.

Question. Does that figure include projects in the new reinforcement category.

Answer. The figure does include [deleted] for the Reinforcement Support Category.

Question. What is in Slice XXXII for U.S. user projects?

Answer. Slice 32 currently contains 35 percent of all projects for the U.S. When the common user projects are not taken into consideration, the U.S. portion of the national user projects comprises 60 percent of the total.

Question. What in terms of U.S. user projects is in the reinforcement program for Calendar 1981?

Answer. The SACEUR recommended Slice 32 contained [deleted] IAU* [deleted] in the Reinforcement Support Category of which [deleted] or 87.5 percent is for support of U.S. requirements. The U.S. user projects include POM-

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*Infrastructure Accounting Unit equals $4.721.

CUS maintenance and storage facilities, ammunition storage and rear reserve (TR–1) storage as well as planning *funds for facilities to be* programmed in following slices.

Question. In the past, there has been various host nation and offset support for U.S. activities in Europe. Can we expect any new host nation support or any additional offset agreements in the near future?

Answer. Yes. The concept of host nation support calls for the nation in which foreign forces are stationed or may be stationed or through which they may be deployed, to furnish essential services and logistical support in order that deploying forces may be designed to maximum combat potential. Negotiations have been completed with several countries for reception and support of deploying air forces. Talks are underway with most of the NATO allies to identify areas where increased host nation support can be provided. In general, the NATO allies will be expected to provide increased logistical support in return for a more rapid reinforcement by U.S. combat forces.

Question. Are there any funds in the fiscal year 1981 request to pay property taxes to a foreign government or subdivision thereof? If so, please specify the amount and to whom they are to go. Were any such taxes paid with fiscal year 1980 funds?

Answer. Yes, these taxes and accommodation charges are part of the host nation support agreements. These charges were paid in fiscal year 1980. $5,122,000 is contained in the fiscal year 1981 request for payment of land taxes to the Federal Republic of Germany and accommodation charges to the United Kingdom.

HOST NATION/OFFSET

Question. Are there any funds in the FY 81 request to fund pollution control projects in foreign countries? If so, please list the facilities, together with the cost of each and the reason for requesting.

Answer. Three projects were submitted under this category in the fiscal year 81 MCA budget request. One was deleted as an Army-selected offset for the fiscal year 81 MCA budget amendment. The two remaining in the program are:

(1) Sewer System Upgrade at airfield K–16 in Korea ($520,000). Although technically a pollution abatement project, this does nothing more than provide for the basic health and sanitation of U.S. troops stationed at the airfield.

(2) Pollution abatement facilities at Kwajalein Missile Range ($990,000). As a U.S. Trust Territory, Environmental Protection Agency requirements apply and must be met at this location.

There are no Navy and Air Force pollution abatement projects.

Question. Are there any funds in the fiscal year 1981 request to cover access roads or utilities in foreign countries?

If so, please identify, together with the amounts.

Answer. There are no Army funds requested for access roads in foreign countries. Projects for utilities in foreign countries include the following:

Hohenfels, Germany: Roads Paving-ASP	$1,700
Vilseck, Germany: Road Paving–ASP	770
Hohenfels, Germany: Provision of commercial power and ranges	310
Border Post Romeo, Germany: Upgrade facilities	330
Bamberg, Germany: Heating Plant	1,500
Viczenza, Italy: Upgrade Transformer Station	480
Camp Henry, Korea: Elevated Water Storage Tank	700
Yongsan, Korea: Upgrade Electrical System	1,250
Camp Walker, Korea: Install Standby Power	210
Pusan, Korea: Install Standby Power	150
Various Locations, Korea: Upgrade water system 2nd Infantry Division Area	9,900

For the Navy, the fiscal year 1981 budget request submitted on February 6, 1980 contained the following utilities projects in foreign countries:

Naval Station, Keflavik, Iceland: Geothermal Heating	$20,000
Naval Air Facility, Atsugi, Japan: Steam and Condensate System	1,000
Naval Support Facility, Diego Garcia: Utilities	2,000

No Navy access roads projects were requested in the budget. For the Navy on Diego Garcia, the fiscal year 1980 Supplemental and fiscal year 1981.

Amended budgets contain the following additional utilities projects:

80S Utilities	$4,000
81A Utilities	10,000

For the Navy in [deleted], the FY 81 Amended budget contains the following projects:

[Deleted] Utilities	$6,000
[Deleted] Utilities	1,000

The Air Force request contains an $8.9 million project for Incirlik AB, Turkey to provide 5,000 KVA of prime power generation capacity and upgrade and base water supply and sewage systems. This work is necessary as the host nation cannot provide reliable prime power at this time. On-base water and sewer service have needed upgrade for some time but the lack of a nation to nation agreement has caused the work to be postponed.

Question. President Carter and the allies committed to a three percent real increase in defense spending.

(A) Has this commitment actually been realized?

(B) Has each NATO member met the commitment?

(C) What standard or criterion is used to determine whether or not a country is meeting the commitment—i.e., how precisely is the calculation made?

Answer. The NATO nations, in guidance approved by Ministers in 1977 and reissued in 1979, agreed to aim at increased defense spending in the region of 3 percent annually over the 1979–1986 period. Although this is only an aim, and it recognizes that circumstances may prevent some nations from attaining the goal, it is an important target for all Allies. Seven nations registered real increases of 3 percent or more in 1978; a like number of allies achieved the 3 percent increase in 1979; and at least five—and possibly several others—are expected to meet or exceed 3 percent in 1980. The weighted non-U.S. average real increase was 2.0 percent in 1980 and 2.7 percent in 1979.

For measuring performance on the 3 percent goal the Alliance uses outlays adjusted to conform to an agreed NATO definition that specifies what is to be included in total defense spending. This incurs a higher degree of comparability than could be achieved using any other available data. As no other NATO nation uses Total Obligational Authority (TOA), it is not surprising, nor unreasonable that the NATO definition is based on outlays. Also, from NATO's standpoint outlays are preferable for measuring actual performance since TOA reflects the earmarking of funds that in some instances will not be spent until four or five years into the future, and could end up being canceled several years hence.

Such outlay data are reported to NATO annually during the Defense Planning Review, and are updated quarterly by detailed reports to NATO. These reports are analyzed by both the NATO International Staff and member countries. Questions on items reported or deflators used may be raised in the course of Trilateral (NATO military and civil staffs) or Multilateral (Representatives of participating member countries) examinations of country responses to NATO's annual Defense Planning Review Questionnaire (DPQ).

Current information on NATO country performance on the 3 percent goal for 1978–1980 is as follows:

NATO COUNTRY DEFENSE SPENDING

[Change from previous year in constant prices (excluding inflation)]

	1978	1979	1980 (estimate)
Belgium	+6.7	+4.5	[Deleted.]
Canada	−.2	+.9	
Denmark	+3.1	+.2	
France	[1] +4.9	[1] +3.0	[1] +3.5
Germany	+3.0	+2.0	[Deleted.]
Greece	[Deleted]	[Deleted]	
Italy	+3.2	−.8	
Luxembourg	+7.9	+1.4	
Netherlands	−5.3	+3.5	
Norway	+7.7	+2.8	
Portugal	+1.7	+12.3	
Turkey	[Deleted]	[Deleted]	
United Kingdom	−.3	+3.9	+3.5
United States	[2] +1.5	[2] +3.2	[3] +3.2
Non-United States NATO	+2.1	+2.7	(3)

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[1] DOD estimates.

[2] Includes DOD and defense related outlays by Department of Energy, Coast Guard, and Military Assistance.

[3] Unavailable.

Question. The IAU (Infrastructure Accounting Unit) is subject to change every six months, I believe.

a. What was the rate to the dollar when the fiscal year 1981 budget was prepared?

b. What is the current rate—and when was this established?

c. Do you anticipate a change in July?

Answer. a. The budget was prepared with a rate of $4.58 to the IAU.

b. The current rate, which was established in January 1980, is $4.72 to the IAU.

c. The IAU rate is changed every 6 months if average bank rates of the national currency compared to the IAU has changed by greater than 2¼ percent. It is not known at this time whether there will be a change for the United States in July.

BACKLOG OF CONSTRUCTION

Question. What is the current backlog of infrastructure construction?

Answer. As explained in Mr. Loveland's statement for the record, the backlog (with approvals of the 1980 and 1981 programs, (Slices XXXI and XXXII) is expected to be $3.61B for which the fiscal year 1981 request is based. As of April 1, 1980, the backlog (including the recently approved Slice XXXI) is $2.22B.

Question. How is this backlog calculated?

Answer. By subtracting the funded projects from the total of programmed projects as explained in Mr. Loveland's statement for the record in the fiscal year 1981 hearings.

Question. Does the backlog include any projects from the current five-year plan or the LTDP?

Answer. Yes, since Slice XXXI was only approved on April 25, 1980, very little of the LTDP requirement has been accomplished under NATO funding. Some portions of the POMCUS and Luxembourg and TR-1 facilities are under construction through prefinancing procedures but will shortly be presented for NATO funding.

QUESTIONS SUBMITTED BY SENATOR STROM THURMOND, ANSWERS SUPPLIED BY MR. JOHN MORGENSTERN, DIRECTOR, STRATEGIC AND THEATER COMMAND AND CONTROL SYSTEMS, OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE FOR COMMUNICATIONS, COMMAND, CONTROL AND INTELLIGENCE

Question. Mr. Morgenstern, has [deleted] donated the land for this new headquarters or is the land being purchased by the United States?

Answer. The USEUCOM Static War Headquarters will be built [deleted]. There is no cost to the United States for the land.

Question. What cost sharing by our allied partners is involved in this project?

Answer. There is significant cost sharing [deleted].

Question. How survivable would this new facility be?

Answer. The facility is [deleted].

Question. When would it be completed?

Answer. The SWHQ construction will be completed in late [deleted]. Installation/test of communications and ADP equipment is anticipated to take approximately [deleted] resulting in a full operational capability by [deleted].

Question. How do you justify the claim in the last paragraph of your statement that this construction would result in "saving considerable costs"?

Answer. By [delted] we save many costs as compared with proceeding with a similar facility [deleted]. For example, we have no land acquisition costs. Second, we achieve economies of scale. The per unit cost of the [deleted].

Senator THURMOND. Is the $64.4 million cost calculated in fiscal year 1981 dollars or has it been calculated through the construction period at an anticipated inflation rate?

Answer. The $64.4 million request was calculated to include the anticipated rate of inflation over the period of construction.

QUESTIONS SUBMITTED BY SENATOR STROM THURMOND, ANSWERS SUPPLIED BY MR. PERRY FLIAKAS, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR INSTALLATIONS AND HOUSING

Question. Mr. Fliakas, is it correct that much of our prepositioned equipment in Europe is located in a small number of large storage areas?

Answer. In the case of the Air Force, we do not have large storage areas for equipment but we do have [deleted] of our current munitions storage in [deleted] large central storage areas.

Since storage of POMCUS equipment was addressed earlier, it is assumed the question refers to the prepositioned war reserve equipment. In that context, it is correct that much of the equipment is stored in a small number of large storage areas.

Senator THURMOND. What percentage of our storage is in large depots?

Answer. The Air Force has [deleted] of its current in-theater munitions storage at the central storage areas which are retail over-flow storage rather than wholesale "depots".

All of our Army prepositioned equipment, or [deleted] is located in large depots.

Senator THURMOND. Where is the largest storage area and approximately what amount of material is stored there?

Answer. The Air Force's largest storage area is at RAF Welford in the UK where we have [deleted] capacity and the area is [deleted] utilized.

For the Army, there are two large storage areas on the Continent, in the Federal Republic of Germany. They are the Kaiserslautern and Germersheim Reserve Storage activities. Kaiserslautern has [deleted] gross square feet of covered storage capacity; only [deleted] is available for prepositioned equipment since the remainder is required and used for operational project stocks, decrement stocks and a small amount of POMCUS equipment. A total of [deleted] short tons of equipment and material are stored at Kaiserslautern, Germersheim has [deleted] gross square feet of covered storage capacity; 450 thousand square feet are used to store POMCUS equipment, as well as decrement and operational project stocks. There remains only a [deleted] square feet of covered storage for prepositioned equipment and supplies. Germersheim stores a total of [deleted] short tons of materiel at the present time.

Senator THURMOND. Why has there not been a greater dispersal of this material?

Answer. For the Air Force there is insufficient capacity at the employment bases, only [deleted] of required capacity exists at these operating bases. We have steadily increased our storage at collocated operating bases and at our main operating bases; however, the substantial theater shortfall [deleted] will keep the central storage areas fully used for the foreseeable future. Only substantial construction funding will permit effective dispersal in the face of rising prepositioning requirements.

For the Army lack of additional real estate on which storage structures might be constructed has limited the dispersal of the material. The Army does, however, plan to construct additional storage on currently controlled real estate in the forward areas; success of the plan is largely dependent upon NATO fund availability.

Question. Would these large depots be high priority targets in the first five hours of a NATO war?

Answer. The large depots at Kaiserslautern and Germersheim will be highly vulnerable during this time, depending on the amount of warning time received. Given [deleted] warning, these depots could well have been emptied by units arriving from the U.S. On the other hand, the depots could still be full, or partially empty at best, if only [deleted] warning time is received. During the first five hours of war, the Soviets could strike these depots [deleted].

Senator THURMOND. Are these storage areas maintained by the US or by the United States and other allied nations?

ANSWER. These storage areas are operated and maintained solely by the U.S. They have a few top-level U.S. military and civilian management personnel;

however, the main body of the workforce is comprised of foreign national personnel.

Senator THURMOND. Mr. Fliakas, does the fiscal year 1981 program continue stockpiling of this reserve material in a few large sites?

ANSWER. The Air Force fiscal year 1981 program has no construction proposed for the central storage areas. However, as indicated previously [deleted].

In 1981 the Army will continue to operate the Kaiserslautern and Germersheim Reserve Storage Activities. In addition, reserve material will be stored in Luxembourg and Belgium. The Army plans additional dispersion of the material as more real estate and NATO funding become available.

Senator THURMOND. Mr. Fliakas, to what reason do you attribute the increased cooperation in NATO in regard to financing construction programs?

Mr. FLIAKAS. NATO entered a period of increased effort with the 1978 Summit agreement to the 123, Long Term Defense Program measures. More specifically, the NATO Allies actively support U.S. initiatives to improve our rapid reinforcement capability. Thus we got agreement in March 1979 to a substantially increased 5-year Infrastructure program.

Senator THURMOND. Have the NATO countries made long range commitments?

Mr. FLIAKAS. Yes they have, both with regard to many of the LTDP measures and to the Infrastructure program I just mentioned.

Senator THURMOND. What is the percent of the U.S. share and the NATO share over the next three years?

Mr. FLIAKAS. The U.S. share of the Infrastructure program is currently 27.42 percent. Our Allies share the rest according to a specific formula under which, for example, Germany pays 26.55 percent and the UK pays 12.08 percent.

QUESTIONS SUBMITTED BY SENATOR GARY HART, ANSWERS SUPPLIED BY MR. PERRY J. FLIAKAS, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR INSTALLATIONS AND HOUSING

CONSTRUCTION BACKLOG

Question. According to your statement, the total "facility deficiency . . . is estimated at $58.6 billion. . .". Is this in fiscal year 1981 dollars or then year dollars?

Answer. The fiscal year 1981 backlog figures is stated in terms of "then-year" dollars.

Question. Compare this with the backlog reported last year and explain the differences.

Answer. The backlog figure addressed in my statement on the fiscal year 1980 Military Construction Authorization Program was $32.0 million as compared to the fiscal year 1980 figure of $58.6 billion. The following factors account for this difference.

(a) The fiscal year 1980 figure included only the facilities deficiencies of the active military services. Had the Guard and Reserves, Defense Agency and Family Housing deficiencies been included the total backlog for fiscal year 1980 would have been about $35.4 billion.

(b) The fiscal year 1981 backlog for these same activities would have been approximately $37.0 billion had it not been necessary to include facilities associated with the MX missile system which added another $21.6 billion for a total fiscal year 1981 backlog of $58.6 billion.

Question. The Committee has been concerned for some time with the question of "how much (military construction) is enough." In your statement in response to Committee report language of last year, you state "a funding level of approximately $6.2 billion in each year of the Five-Year Defense Program would produce a reversal in the growth of facility deficiencies."

a. How did you compute the $6.2 billion figure?

b. Is this a bill total or for only military construction less family housing?

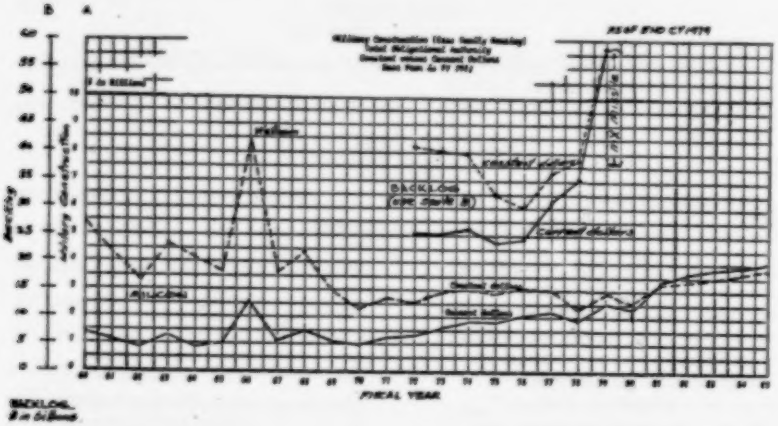
c. Despite the fact that you say you need $6.2 billion, you are asking for only $5.2 billion. Why?

Answer. It was estimated that the facility deficiencies reported last year would increase from $35.5 billion to $38.4 billion allowing just for inflation. Based on a program of ten years, approximately one-tenth of the facilities should be programmed for fiscal year 1981 and the following years to assure adequate facility logistic support and to produce a reversal in the growth of deficiencies. Adding to this proposed increment of $3.8 billion, the fiscal year 1981 funding required to meet Defense family housing needs of $1.9 billion (primarily for operation, maintenance, leasing and debt payment), and $.5 billion for the Defense Agencies and NATO Infrastructure results in an estimated military construction program of $6.2 billion. While this goal was not achieved for fiscal year 1981, it is 42 percent greater than our request for fiscal year 1980. We were not able to request the full amount due to fiscal restraints. The $6.2 billion requirement did compete with other important defense needs using the zero based budgeting techniques. Had the Defense request been higher, military construction would also have been higher. However, it should also be noted that we now estimate our total facility deficiences at $58.6 billion, which now includes $21.6 billion for the Air Force M-X missile program. As a consequence, programming future military programs will present some difficult trade-offs if future military construction budget requests are not increased.

HISTORY OF CONSTRUCTION AUTHORIZATIONS

Question. Provide for the record a chart showing military construction authorization (less family housing) since 1960. Graph authorizations in both current dollars and constant FY 1981 dollars using the ENR Building Construction index to compute constant dollars. Identify the "Vietnam hump" and any other anomalies. On the same chart, plot the construction backlog to the extent that data are available in both current and constant fiscal year 1981 dollars. Forecast all data through the FYDP and identify separately the MX construction requirements.

[The information follows:]



Question. Discuss the above chart and any conclusions that can be drawn.

Answer. The above chart reflects all data available at this time. No outyear projections are developed for the backlog because of the unpredictable nature of the several elements upon which it is based (e.g., mission changes, force structure, base closures, criteria, etc.). Instead the backlog is updated annually as of the end of each calendar year. Similarly outyear projections for military construction are identified in the Five Year Defense Program (FYDP) which is used internally as an informal planning document and is updated following development of the annual program/budget. Since it has not been approved by OMB or the President, the Secretary of Defense does not wish to release this information. Therefore, this portion of the chart reflects only the estimated real growth of the military construction program and does not address the effects of such programs as the MX, Trident and Space Shuttle.

The primary conclusion to be drawn from this chart is that, notwithstanding the obvious effects of such major programs as the MX, any effort to reduce this backlog will require the combined benefits of a significant reduction in the inflation rate and substantial increases in future military construction budgets.

CONSTRUCTION EXECUTION

Question. Your statement indicates a "performance execution rate" of "approximately 90 percent of the available program." For the record, please break this out by Service and show the rate in terms of numbers of projects and available dollars.

Answer. The information follows:

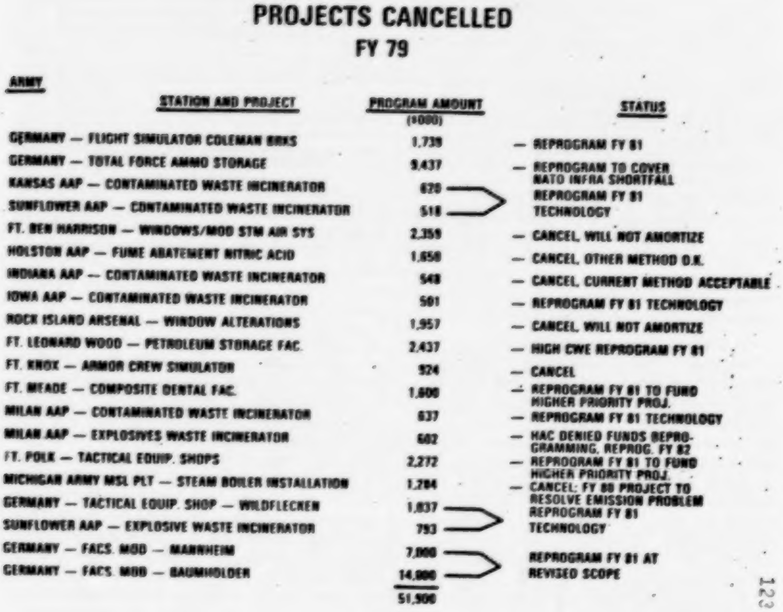
[Dollar amounts in millions]

	Army	Navy	Air Force	Total	Percent
Status of the fiscal year 1979 milcon program (as of Dec. 31, 1979):					
Funded authorization	$649.5	$675.2	$436.9	$1,761.6	
Awarded	539.6	625.0	271.6	1,436.2	81.5
Cancelled	51.9	14.1	2.1	68.1	3.9
Hold	11.9	1.0	108.3	121.2	6.9
Executed	603.4	640.1	382.0	1,625.5	92.3
Projects:					
Funded authorization	134	224	139	497	
Awarded	91	205	101	397	79.9
Cancelled	20	7	5	32	6.4
Hold	5	1	3	9	1.8
Executed	116	213	109	438	88.1

CONSTRUCTION EXECUTION

Question. List those "projects cancelled or delayed beyond Service control."

Answer. The information follows:



PROJECTS CANCELLED
FY 79

ARMY

STATION AND PROJECT	PROGRAM AMOUNT ($000)	STATUS
GERMANY — FLIGHT SIMULATOR COLEMAN BRKS	1,739	— REPROGRAM FY 81
GERMANY — TOTAL FORCE AMMO STORAGE	9,437	— REPROGRAM TO COVER NATO INFRA SHORTFALL
KANSAS AAP — CONTAMINATED WASTE INCINERATOR	620	REPROGRAM FY 81 TECHNOLOGY
SUNFLOWER AAP — CONTAMINATED WASTE INCINERATOR	518	
FT. BEN HARRISON — WINDOWS/MOD STM AIR SYS	2,359	— CANCEL, WILL NOT AMORTIZE
HOLSTON AAP — FUME ABATEMENT NITRIC ACID	1,650	— CANCEL, OTHER METHOD O.K.
INDIANA AAP — CONTAMINATED WASTE INCINERATOR	548	— CANCEL, CURRENT METHOD ACCEPTABLE
IOWA AAP — CONTAMINATED WASTE INCINERATOR	501	— REPROGRAM FY 81 TECHNOLOGY
ROCK ISLAND ARSENAL — WINDOW ALTERATIONS	1,957	— CANCEL, WILL NOT AMORTIZE
FT. LEONARD WOOD — PETROLEUM STORAGE FAC.	2,437	— HIGH CWE REPROGRAM FY 81
FT. KNOX — ARMOR CREW SIMULATOR	924	— CANCEL
FT. MEADE — COMPOSITE DENTAL FAC.	1,600	— REPROGRAM FY 81 TO FUND HIGHER PRIORITY PROJ.
MILAN AAP — CONTAMINATED WASTE INCINERATOR	637	— REPROGRAM FY 81 TECHNOLOGY
MILAN AAP — EXPLOSIVES WASTE INCINERATOR	602	— HAC DENIED FUNDS REPROGRAMMING, REPROG. FY 82
FT. POLK — TACTICAL EQUIP. SHOPS	2,272	— REPROGRAM FY 81 TO FUND HIGHER PRIORITY PROJ.
MICHIGAN ARMY MSL PLT — STEAM BOILER INSTALLATION	1,284	— CANCEL; FY 80 PROJECT TO RESOLVE EMISSION PROBLEM
GERMANY — TACTICAL EQUIP. SHOP — WILDFLECKEN	1,837	REPROGRAM FY 81 TECHNOLOGY
SUNFLOWER AAP — EXPLOSIVE WASTE INCINERATOR	793	
GERMANY — FACS. MOD — MANNHEIM	7,000	REPROGRAM FY 81 AT REVISED SCOPE
GERMANY — FACS. MOD — BAUMHOLDER	14,000	
	51,900	

PROJECTS ON HOLD
FY 79

ARMY

STATION AND PROJECT	PROGRAM AMOUNT ($000)	STATUS
FITZSIMMONS AMC — ENERGY CONTROL SYSTEM	$ 1,372	— OSC REGIONAL MEDICAL CENTER STUDY
FT. MONROE — REGIONAL STP UPGRADE	550	COMPT GENERAL DECISION PRECLUDES CAPITAL INVEST. WHERE UTILIT. SERVICE CONTRACT EXIST
FT. BLISS — REGIONAL STP UPGRADE	1,209	
FT. JACKSON — ENERGY CONTROL SYSTEM	3,300	— TRAINING BASE STUDY
FT. STEWART — REGIONAL SEWER SYSTEM — WPC	5,494	— DELAY IN EPA GRANT TO MUNICIPALITY FOR DESIGN START
	$11,925	

UNAWARDED PROJECTS
FY 79

NAVY

PROJECTS ON HOLD

STATION AND PROJECT		PROGRAM AMOUNT ($000)	STATUS
NMRU CAIRO	— BIOMEDICAL RESEARCH LAB	$ 960	— DELAY IN STATE DEPT. COUNTERPART FUNDS

PROJECTS CANCELLED

STATION AND PROJECT		PROGRAM AMOUNT ($000)	STATUS
NRTF ANNAPOLIS	— SEAWALL REPAIR	850	— REPROGRAM; EXCESSIVE BID
NS PEARL HARBOR	— BUILDING ALTERATIONS	890	— POLLUTION TECHN PROBLEMS; REPROGRAM
MCB CAMP PENDLETON	— BEQ MODERNIZATION	7,300	— EXCESSIVE CWE; REPROGRAM FY 81
NAS NORTH ISLAND	— AIRCRAFT RINSE FACILITY	610	— EXCESSIVE BID
PMTC POINT MUGU	— BOILER FUEL CONVERSION	1,500	— NOT REQUIRED
FTC SAN DIEGO	— BUILDING ALTERATIONS	1,400	POLLUTION TECH. PROBLEMS; REPROGRAM
NTTC SAN FRANCISCO	— BUILDING ALTERATIONS	1,550	
		$14,100	

PROJECTS CANCELLED

FY 79

AIR FORCE

STATION AND PROJECT	PROGRAM AMOUNT	STATUS

KIRTLAND AFB — MODIFY STEAM LINE	650	— NOT COST EFFECTIVE
GALENA AFB — ASR/PAR	540	— EXCESSIVE BIDS; REPROGRAM
SHEMYA AFB — ASR/PAR	546	
TINKER AFB — VORTEC	128	
FAIRCHILD AFB — ILS	275	— REPROGRAM TO FUND HIGHER PRIORITY PROJECT
	$2,139	

PROJECT ON HOLD

STATION AND PROJECT	PROGRAM AMOUNT	STATUS
RICKENBACKER AFB — SEWER MAIN CONN	$ 946	— NEGOTIATIONS WITH MUNICIPALITY
MOODY AFB — FLIGHT SIMULATOR	900	— MISSION CHANGE
VANDENBERG AFB — STS	104,700	—NASA CRITERIA CHANGE
	$108,346	

Question. Are your comparative figures for earlier years based on total program or "available program"?

Answer. Previous years' figures on program performance for the military construction program are consistent and are based on the available program.

CONSTRUCTION IN EUROPE

Question. Discuss the next slice group of the NATO Infrastructure program. What is the U.S. share? Show how it is computed.

Answer. In May 1979, the allied nations approved a 1.0 billion Infrastructure Accounting Unit (IAU) program, which equates to approximately $4.7 billion for slice group 31–35 (Calendar Years 1980–84). Since the major NATO Commanders (MNC) had identified requirements of twice this amount during this time frame, it was also agreed to review requirements at the mid term of the period to determine the feasibility of increasing the size of the slice group. The U.S. portion of each slice is determined by the MNC's SACEUR and SACLANT, based upon projects submitted by each nation in support of NATO missions. It is not possible at this time to determine what ultimately the MNC's will include for the U.S. in each slice, however, slice 31 has 56.2 percent of national user projects and slice 32, which is being reviewed by NATO, currently contains 60.5 percent of national user projects for the U.S.

The U.S. share, or contribution, to the NATO Infrastructure program remains essentially at the same level for this slice group as it had been for the previous one, that is 27.4 percent. The criteria for Infrastructure cost shares is based upon (1) the ability of the country to pay, (2) the economic benefits, and (3) the output of the program for the forces of the country.

Question. You are asking to double our contribution to the Infrastructure program over that appropriated last year. Justify.

Answer. The increase in NATO Infrastructure is based upon the requirement for U.S. funds in fiscal year 1981. This represents funding requirements for projects which have been approved but not authorized by the Progress and Payments Committee, the programs included in Slices 31 and 32 minus the planned obligations in fiscal year 1980. The anticipated backlog in 1981 for which these funds are being requested is $3.6 billion. This exceeds the backlog of September 30, 1979, and the anticipated obligations by fiscal year 1980, upon which the $150 million requirement was based, by $2.3 billion.

Question. Don't you have unused authorization for NATO Infrastructure that could be applied to offset your request for fiscal year 81?

Answer. There is no surplus authorization that will be available at the end of fiscal year 1980 that could be used to offset the 1981 request. Due to this Committee's initiatives, the DoD request of $150 million for fiscal year 1980 was increased to $185 million and subsequently enacted; $150 million was appropriated. The U.S. mission to NATO, based on obligations to date, and known U.S. requirements the remainder of the year particularly for the large projects in Slice 31 (POMCUS, Project 85, etc) anticipates a requirement of at least $185 million for fiscal year 1980. The difference between the funds appropriated, $150 million, and this authorization, $35 million, will be provided through recoupments planned for this year.

Question. What is the situation with respect to the prefinanced, unrecouped balance? How are recoupments coming along?

Answer. The total amount of potentially recoupable prefinanced projects as of September 30, 1979 is $413 million. Of this amount over $200 million has been included in approved slices (including Slice 31) and these projects are being processed for recoupment. Of the remaining $213 million not all funds will be recouped, as some projects, such as those included in the Long Range Security Program (LRSP) were constructed before NATO criteria had been established. If NATO criteria does not coincide with U.S. criteria which was the basis of construction, NATO will fund only its approved criteria. Also, some projects that were prefinanced will utimately be directly funded by the Infrastructure program, with no resulting recoupment; e.g., the first portion of POMCUS for Division Set 4. For these reasons, not all of the outstanding prefinanced projects are expected to be 100 percent recouped.

The Office of the Secretary of Defense has carefully analyzed the outstanding recoupment balance and has identified targets for each of the Services to eliminate their program. The Secretary has directed the Services to seek SACEUR and SACLANT programming of all outsanding recoupments from Slice 31 through Slice 36, with actual collection of funds by 1985.

Question. Trace the construction authorization for Europe for the last six years by service. Include the FY–81 request for comparison.

Answer.

[Dollar amounts in millions]

	Authorization					Requested
	1976	1977	1978	1979	1980	1981
Army	45.0	15.9	179.1	260.8	131.6	231.4
Navy	0	7.8	8.9	46.8	35.4	53.1
Air Force	99.1	51.0	135.1	45.4	36.9	82.6
NATO infrastructure	75.0	80.0	85.0	120.0	185.0	300.0
Total	219.1	154.7	408.1	473.0	388.9	667.1

ALLIED ASSISTANCE

1. *Question.* Review for the Committee, the so-called "offset" program. Who funded it, when; what did it accomplish, what was the total funding, etc.?

Answer. Listed below is a chronology of agreements to offset the adverse balance of payments stationing costs of US and the Federal Republic of Germany between 1962 and 1975. These offset agreements ran consecutively for two years at a time; at any one time there was only one agreement in effect. The final agreement expired on 30 June 1975. President Ford and Chancellor Schmidt then entered into a joint announcement that no more formal arrangements to offset troop stationing costs would be concluded between the two countries, but that the FRG would continue to provide support where circumstances indicate.

[By fiscal years, dollar amounts in millions]

	Terms	Target
1962–63	Federal Republic of Germany military procurement from the United States	$1,350
1964–65	do	1,375
1966–67	do	1,158
	Prepayment of Federal Republic of Germany debt to United States	192
	Total	1,350
1968–69	Federal Republic of Germany military procurement from the United States	200
	Federal Republic of Germany purchases of U.S. Treasury securities	1,125
	Total	1,325
1970–71	Federal Republic of Germany military procurement from the United States	842
	Federal Republic of Germany concessional loan to United States	250
	Federal Republic of Germany purchases of certain loans	159.68
	Federal Republic of Germany civil procurement from the United States	129.60
	Federal Republic of Germany investment fund for United States	163.93
	Advance debt payments	43.75
	Retention in United States of interest earned by Federal Republic of Germany	32.50
	Total	1,621.76
1972–73	Federal Republic of Germany military procurement from the United States	1,227
	Federal Republic of Germany concessional credits to United States	621
	Federal Republic of Germany payment to defray interest on credit	31
	Troop facilities rehabilitation	186
	Total	2,065
1974–75	Federal Republic of Germany military procurement from the United States	1,086
	Troop facilities rehabilitation	224
	Real estate taxes and landing fees	8
	Uranium enrichment service	75
	Civilian R. & D. projects	38
	Federal Republic of Germany purchase of special U.S. Treasury securities	898
	Total	2,329

Question. The Germans financed the construction of the new brigade complex at Garlstedt. How much did they contribute?

Answer. $68.48 million.

Question. Why did the Germans pay for Garlstedt?

Answer. The original rationale for offset agreements between the U.S. and the Federal Republic of Germany was to assist the U.S. in reducing the adverse balance of payments effects resulting from stationing its forces in the NATO nations in general, and in Germany in particular. However, changed international economic conditions, especially the adoption of a system of floating exchange rates, rendered the original basis for offset agreements essentially obsolete. On these grounds, Chancellor Schmidt and President Ford terminated the series of bilateral offset agreements on July 17, 1976. On that occasion, however, the Federal Republic of Germany expressed its willingness to consider on a case-by-case basis projects of mutual defense benefit. Chancellor Schmidt's commitment to fund about 60 percent of the construction costs associated with relocating a U.S. Army brigade to northern Germany is a case in point.

[Deleted.]

Question. Are there any other similar programs in the planning or negotiating stages now?

Answer. [Deleted.]

RESTATIONING

Question. You mentioned the [deleted] Plan for Europe. What is this plan and what prompted it?

Answer. The [deleted] was designed to improve combat readiness by correcting malpositioning, accommodating force modernization changes, and [deleted].

[Deleted.]

The [deleted] was developed in response to the change in the WP threat capability [deleted].

To highlight the malstationing problem: the [deleted] elements are stationed an average of [deleted] kilometers from their fighting positions. [Deleted] of the [deleted] maneuver strength and all of its [deleted] are stationed [deleted] kilometers from their fighting positions.

Question. How much will the plan cost in terms of construction dollars?

Answer. The currently programmed cost of construction for those actions strictly related to restationing is:

[Deleted.]

[Deleted.] Most of this cost ($212.2 million) must be incurred regardless, as part of the modernization of the force. [Deleted.]

All costs shown are estimates, and may change as the program develops.

Question. Who will pay these costs?

Answer. The U.S. will pay for [deleted].

Question. Have the Allies been approached about paying the costs—after all we will be vacating some very valuable urban real estate that will greatly benefit the host government?

Answer. [Deleted.]

Formal negotiations have not been initiated. [Deleted.]

TROOP WITHDRAWAL

Question. I mentioned troop withdrawal from NATO in my opening remarks. Is there any consideration being given within the Defense Department to withdrawing some of our forces from NATO?

Answer. The Defense Department is currently studying the balance of our forces between NATO Europe and Southwest Asia to best meet the threat. There is, however, no present plan to withdraw US troops stationed in Europe.

Question. Jack Anderson in his April 28, 1980 column, carried a story about a report recommending pullout of U.S. forces in Europe. The report was authored by Robert Ellsworth and Admiral Harry Train. What can you tell us about this report?

Answer. The report referred to was one of several Joint Staff studies examining US force deployments. After reviewing the report itself as well as the history of the case we conclude that the broad study initially contemplated was never carried out. Thus, the factors initially considered never got beyond the theoretical stage.

EUCOM HEADQUARTERS

Question. You have requested $65 million to build a wartime headquarters for the U.S. European Command (EUCOM) Headquarters. Why won't NATO pay for this requirement?

Answer. The NATO Infrastructure program provides for facilities for joint use of two or more countries and which are essential to the operations of NATO forces. The EUCOM Headquarters is a U.S. requirement only, that will be the headquarters for the CINCEUR in time of crises, along with U.S. staff personnel. Since this facility is a national requirement, it is not eligible for NATO funding and the U.S. must fund for it. This is not precedent setting as other members of the Alliance have constructed their own similar wartime headquarters at their own expense as they also were not eligible for NATO funding.

ENERGY

Question. A little over a year ago, Mr. Marienthal testified regarding eight major new energy initiatives. Please review the status of each one including the current cost estimate and funding status.

Answer. The following is a review of the status of energy technology initiatives that Mr. George Marienthal, Deputy Assistant Secretry of Defense (Energy, Environment and Safety), had previously addressed during hearings before the SASC Subcommittee on Military Construction and Stockpiles.

Oil shale

Approximately 61 percent of Department of Defense energy consumption is mobility fuel for aircraft, ships, and ground vehicles. We have an aggressive mobility fuel technology program in which we are testing shale-derived synthetic fuels in our mobile platforms. We are currently negotiating with the

Department of Energy concerning the availability and cost of 200,000 barrels of refined shale oil in 1980-1983 for our shale-derived fuel test and evaluation programs. We have reached a milestone, however, in our cooperative efforts with the Department of Energy. A cooperative agreement has just been signed to transfer 42,000 barrels of crude shale oil from DoE to DoD for test purposes. If these tests are successful, the Department of Defense will be ready to utilize shale-derived fuels in mobile weapon systems in the mid- to late 1980's.

Solar Energy: Solar Heating and Cooling and Photovoltaics

Regarding solar energy, the Department of Defense has actively pursued the solar option under our military construction program and in federal programs that the Department of Energy manages. We currently have 161 solar energy projects, totaling $59 million, in various stages of operation, construction, or design. Thirty-four of these are operational projects that were the result of our early efforts to utilize solar systems prior to the passage of Public Law 95–356. This legislation requires DoD to use solar energy systems in new military family housing and other facilities when it is found to be cost-effective. Prior to the passage of this legislation, we had not budgeted for the inclusion of solar energy systems in our construction projects. Use of the solar option was dependent on good bids on the basic facility in order to have sufficient funds to accomplish its installation.

The fiscal year 1981 program is the first opportunity we have had to budget for solar systems in our military construction programs. This program has identified 30 projects in the Department of Army and 36 projects in the Department of Navy which meet the cost effectiveness definition contained in Public Law 96–175. The 66 Army and Navy projects are estimated to cost about $12.8 million. The Department of Air Force did not budget for solar energy in the fiscal year 1981 request because their studies had not reached a point where reliable cost could be established. They have identified approximately 28 candidate projects, however.

In addition, we have submitted 51 proposals to the Department of Energy, under the Solar in Federal Buildings Program. The purpose of this program is to assist us in rapidly introducing solar heating and cooling systems in defense facilities, to accelerate the commercialization of solar technology through Federal demonstration, and to provide the Federal Government with reliability and maintainability data on solar systems. Our proposed projects total $10.6 million for passive and active solar space heating, cooling, and hot water application in a variety of facilities, including administrative centers, dormitories, family housing, shopping centers, and launderettes.

We are also active in the Department of Energy's Federal Photovoltaic Utilization Program (FPUP). The DoD has received $2.8 million through fiscal year 1979, to design, construct, and install approximately 230 solar cell power systems at defense installations. Applications included environmental sensors, navigational aids, aviation aids, telecommunications, and intrusion detectors. Under the most recent FPUP proposal solicitation, we were awarded $1.9 million for photovoltaic systems for a control tower, an operation post, an observation post, and a residential power system, as well as four studies which will evaluate more photovoltaic military applications. We are now preparing new proposals for the next cycle of FPUP. These proposals will be directed toward the intermediate electric power grid connected market, including: barracks, manufacturing facilities, hospitals, PX's, office complexes, and schools.

Typical remote site applications of this technology within the Department of Defense include the following two photovoltaic power systems:

The 60 KW power system at Mt. Laguna Air Force Station, California. This is the world's largest photovoltaic display. This radar tracking station will permit very detailed monitoring of operations and costs, and pave the way for even larger projects; and

The 1600 W power supply at White Sands Army Missile Range, New Mexico. After more than 30 months of operation, its maintainability and reliability have been excellent.

Wood burning

Army is completing the design for constructing a new coal/wood-fired central boiler plant at Red River Army Depot, Texas, under their FY 1980 military construction program. We anticipate that the use of wood as fuel, in up to a 50:50 mix with coal, will reduce the pollutants in the exhaust stream from the boilers.

Army also has a wood-fired boiler addition to an existing oil-fired central heating plant at Fort Stewart, Georgia, in their FY 1981 military construction request ($6.3 million). The project provides for expansion of the existing plant and the wood handling and storage facilities. The design provisions for this project will also include the necessary capabilities for this plant to burn coal and refuse in the future.

Geothermal energy

Geothermal energy can be used for electric power production, space conditioning, and industrial process heat. We are interested in the application of geothermal energy in our fixed facilities, to replace oil, for any of these purposes. Over 100 DoD facilities have been identified as being collocated with potential geothermal reservoirs.

For example, the Navy has been very active in tapping geothermal energy for its bases in Iceland. A fiscal year 1978 military construction pilot project to connect three buildings at Grindavik to a local geothermal district heating system is operational. At Keflavik, Iceland, a fiscal year 1980 military construction project to partly connect 150 buildings to the local geothermal district heating system is underway, and the Navy is also making an fiscal year 1981 military construction request to connect the remaining of the 313 buildings at Keflavik to the geothermal district heating system. This request totals $20 million and is estimated to save 70 million gallons of heating oil over the 10-year life of the project. This oil would have been exported from the United States.

The Navy had also received $2 million from the Department of Energy to drill and prove a 4,800 foot geothermal reservoir hole in November, 1978, at the Naval Weapons Center, China Lake, California.

Following Navy solicitations, an award was made in December, 1979, to a contractor to develop, at his own expense, this geothermal resource to produce up to 75 MW electricity for sale to the Navy.

In addition, the Air Force is negotiating with the Department of Energy to drill additional test holes at Williams Air Force Base, Arizona, at a cost of $1 million. After the feasibility of this geothermal resource is defined and proven satisfactorily, the Air Force will solicit private sector development of this energy source for space conditioning and electrical production. Other promising areas containing geothermal energy sources, located near DoD facilities, which are also of interest to the Department of Energy, include San Antonio, Texas; Fallon, Nevada; Charleston, South Carolina; Kings Bay, Georgia; and Dover, Delaware. Future candidates for joint DoD–DoE geothermal resource confirmation drilling programs may be selected in these geographical areas.

Coal: Conversions, Fluidized Bed, and Gasification

The United States has more energy available in coal than in petroleum, natural gas, oil shale, and tar sands combined. Nationwide energy shortages, together with the availability of abundant coal reserves, makes the use of coal for heating, as well as power generation and synthetic fuels, vital to the nation's total energy supply. There are over 800 military installations in the continental United States, and these have roughly 8,000 boiler plants. Forty-two installations have some boiler plants that burn coal.

A total conversion to coal at our 800 installations would cost in excess of $3 billion. If a conversion program were to be conducted over a several year period, inflation would certainly increase this estimate. Budget constraints simply preclude a mass conversion program of this order of magnitude. In 1980, DoD is converting or replacing six oil burning and natural gas-fired plants with coal burning plants, however. We have also surveyed opportunities for conversion of DoD heating plants from oil or natural gas to coal and other solid fuels, such as refuse derived fuel and wood. The results of the preliminary survey of the conversion candidates indicate that we have 93 facilities which have some potential for ultimate conversion to coal. The total conversion cost exceeds $1.3 billion. We have four projects, Fairchild Air Force Base, Naval Amphibious Base Little Creek, Fort Stewart, and Redstone Arsenal in the fiscal year 1981, military construction program. They represent a total request of $36.2 million.

For some of our planned conversions, we are studying opportunities for the military departments to obtain temporary air quality control variances from state environmental offices to burn coal. This strategy will be used at installations which require minimal modification to burn coal temporarily without additional, long lead time, costly pollution control equipment. One such installation is the Quantico Marine Corps Development Education Center, Virginia.

Under a separate program, we have been working with the Department of Energy in a jointly sponsored program to demonstrate new technologies for using coal at military installations. Examples of the projects we are considering include:

Fluidized bed boilers in which coal is burned in a mixture of air and limestone, resulting in the generation of steam. Fluidized bed combustion has the potential to burn coal more efficiently and economically than conventional coal-fired boilers with pollution control equipment. Installation of a fluidized bed boiler at the Great Lakes Naval Training Center in Illinois, will be completed in May, 1980.

Gas turbines using low Btu gas produced from coal.

Lignite-fired boilers.

Some of these technology demonstration projects are discussed thoroughly in our answer to the next question concerning the showcase initiative.

Question. Where does your "energy showcase base" effort stand?

Answer. The DoD-DoE energy conservation showcase projects are outlined in great detail in Enclosure 1. As Mr. Marienthal testified before the Subcommittee on December 18, 1978, the Department of Energy provided $500,000 for each of these three energy technology demonstration center initiatives, to conduct architect-engineer (AE) studies at each installation. Army and Air Force funded an additional $500,000 and $472,000, respectively, to perform these AE studies. Most of the Army and Air Force AE studies will be completed in June, 1980, and the Navy AE studies will be completed in the fall of 1980. When these studies are completed, DoD and DoE will make a final decision on the showcase projects to be funded.

As indicated in Enclosure 1, the two departments held a joint energy technology workshop in March 10–12, 1980, to identify programs of mutual interest for joint funding. The showcase projects listed in Enclosure 1 were fully discussed at the workshop. A workshop report will be available at the end of March, 1980. It will be used to develop a five-year program plan for joint DoD-DoE energy technology activities, including: mobility fuels, energy conservation, fossil energy for fixed facilities, solar, renewable, and geothermal energy sources, and energy storage.

[Enclosure.]

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE,
Washington, D.C.

Hon. WORTH BATEMAN,
Deputy Under Secretary,
Department of Energy,
Washington, D.C.

DEAR MR. BATEMAN: This is to respond to your letter of November 26, 1979, which requested my views on how the Department of Defense-Department of Energy joint energy technology initiatives program can best be implemented to satisfy the objectives set forth in the memorandum of understanding (MOU) between the Department of Defense (DOD) and the Department of Energy (DOE), signed October 19, 1978.

The MOU establishes two basic goals: improving energy efficiency and availability within DOD, and utilizing DOD and DOE expertise and facilities to carry out projects of mutual interest. Furthermore, the MOU states that cooperative energy activities undertaken between DOD and DOE should be designed to: enhance national security; reduce United States dependency on foreign energy supply; ensure that renewable and abundant domestic energy resources can be utilized; and promote energy conservation efforts.

The Department of Defense has an aggressive energy program which is responsive to the designs and goals of the MOU. The defense energy program is composed of strategies to assure energy supply, energy conservation, and utilization of new energy technology throughout the military departments. We have programmed over $2 billion through fiscal year 1984 in our military construction, operations and maintenance, and research, development, test, and evaluation budgets, for work in energy conservation and energy technology (Enclosure 1). Examination of our programming effort for solid fuel conversions, installation of solar energy systems, and investment in energy conservation projects reveals that our funding requirements exceed our budget allotments, however. Due to competing requirements for scarce dollars, we have been successful in budgeting only about 60 percent of our energy program requirements between fiscal year 1980–1984. The cumulative unfunded portion of our defense energy program requirements will total $1.4 billion during that time frame.

Due, in part, to these fiscal limitations, but also to the fact that DOE is charged with the research, development, and demonstration of new energy technologies, I am looking forward with great optimism to a renewed, cooperative effort between our departments in conducting joint energy technology initiatives of import to both DOD and DOE.

In accordance with section IV, paragraphs b and c of the MOU, we have examined our operational energy program and have identified those energy technology areas which are critical to meeting the mutual objective of the two agencies to promote energy conservation efforts and to ensure that renewable and abundant domestic energy resources are utilized. We have also examined DOE energy technology research, development, and demonstration programs, based upon available DOE planning information. As a result of our efforts, we have:

Completed a list of candidate projects which appear to support the DOE energy technology research, development, and demonstration program, and are of operational interest to the DOD (Enclosure 2); and

Identified several energy technology areas, which appear to require additional emphasis in order to assist us in achieving energy reduction and substitution objectives, and recommend them as candidates for enhanced and new DOD-DOE joint energy technology initiatives (Enclosure 3).

The list of projects in Enclosure 2 is presented in order of energy technology area, with a brief synopsis and funding profile for each project. We have not attempted to rank in order of priority or to assign the funding required for the projects listed in Enclosure 2 to either DOD or DOE. The division of funding is negotiable and is relative to the benefits either agency accrues through the completion of any project. The list of recommendations in Enclosure 3 provides an extended narrative for each and does not address funding. To facilitate your review of the projects, we have further itemized them in terms of fiscal year (Enclosure 4), responsible military department (Enclosure 5), and authorizing federal program or agreement (Enclosure 6).

It may be seen in Enclosure 4 that funding requirements for these projects are evenly distributed among the energy technology areas (e.g., photovoltaics; solar heating and cooling; geothermal; conservation; wood; biomass; and wind), with the exception of coal technology. This technology area would receive the largest funding due to the fact that each military department plans to install coal burning heating plants. It may be seen in Enclosure 5 that the 141 projects listed are fairly evenly distributed among the military departments. Here again, however, the coal technology initiative influences the breakdown of funds between the departments. The 1:2:3 allocation of total funds between the Army, Navy, and Air Force parallels the cost of the proposed, individual coal burning heating plants. Finally, it may be seen in Enclosure 6 that federal programs, such as the Federal Photovoltaic Utilization Program, account for the largest number of projects proposed (63 percent) but would receive the smallest, relative funding (7 percent). The group receiving the most funds, as proposed, would be the demonstration projects at showcase installations.

The showcase installations were conceived under the MOU as a highly visible display of advanced energy management procedures and selected major new energy supply and conservation measures. The Army showcase is the Red River Army Depot and Lone Star Army Ammunition Plant (RRAD/LSAAP) complex at Texarkana, Texas. The Navy showcase is the Sewells Point complex at Norfolk, Virginia. The Air Force showcase is McClellan Air Force Base near Sacramento, California. In FY 1979, DoE provided $500,000 to each of the three showcase installations to fund architecture-engineer (AE) studies of specific projects. The narrative for each showcase project in Enclosure 2 identifies the DoE funds used in studying its feasibility. In the case of the RRAD/LSAAP complex and the McClellan Air Force Base showcases, the Army and the Air Force funded an additional $500,000 and $472,000, respectively, to perform the AE studies.

This letter in its entirety has been reviewed within the military departments and the DoE points of contact identified in your November 26, 1979, letter. I believe that we have completed all efforts which can be reasonably accomplished at this point on these proposals. As you are aware, your staff and mine have been working with representatives of the Los Alamos Scientific Laboratory, Los Alamos, New Mexico, to plan a DoD–DoE workshop on energy technology to be held at the National Bureau of Standards, Gaithersburg, Maryland, March 10–12, 1980. During this workshop, DoD project officers will work with representatives of DoE's program offices to develop the planning, programming, and budgeting strategies for the joint projects and recommendations listed in Enclosures 2 and 3, as well as any other new initiatives that DoE might suggest.

Your early selection, for joint DoD–DoE implementation, from among the projects and recommendations listed in the enclosures would ensure a productive workshop. I would appreciate receipt of your preliminary selection prior to the workshop. I would be pleased to meet with you to review these proposals prior to March 10, 1980. Should your staff have any questions regarding this matter, please have them contact Ed Dyckman of my staff at 697–1988.

Please call me at 695–0221 if I can be of any further assistance. Thank you for the opportunity to submit to you our proposals and recommendations under this very important joint program.

Sincerely,

George Marienthal,
Deputy Assistant Secretary of Defense
(Energy, Environment and Safety).

[Enclosures:]

ENCLOSURE 1

COMPILATION OF DOD ENERGY FUNDING REQUIREMENTS AND PROGRAMING INDEPENDENT OF THE JOINT DOD–DOE ENERGY TECHNOLOGY INITIATIVES

[In millions of dollars, fiscal years]

Energy program area	Funding requirements					
	1980	1981	1982	1983	1984	Total
Military construction: Sold fuel conversion, solar/geothermal projects, energy conservation investment program	338	440	601	662	599	2,640
Operation and maintenance: Energy engineering and analysis, energy information, energy management	83	91	106	100	87	467
R.D.T. & E.: Conservation, synthetic fuels, alternate energy sources	46	65	78	85	91	365
Total requirements	467	596	785	847	777	3,472
Total funds programed	277	360	511	496	453	2,097
Unfunded	190	236	274	351	324	1,375

ENCLOSURE 2

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
PHOTOVOLTAICS						
[The purpose of this initiative is to evaluate the cost effectiveness of photovoltaics in selected defense applications and to accelerate photovoltaic commercialization]						
Federal photovoltaic utilization program (FPUP): DOD received $2,765,000 through fiscal year 1979, under FPUP cycles I and II to design, construct, and install approximately 230 solar cell power systems at DOD installations. Under FPUP cycle III, DOD has submitted 41 proposals, totaling $23,447,000 as follows:						
Army: Submitted 10 proposals, e.g., mobile instrumentation power sources, battery charging facilities, TV surveillance, and a climatic instrumentation van	3,408					3,408
Navy: Submitted 16 proposals, e.g., remote communication sites, electronic weapon sites, operation posts, satellite communication, control tower, and a microwave repeater	9,168					9,168
Air Force: Submitted 15 proposals, e.g., instrumentation facilities, transmission systems, microwave repeater unit, plating facility, and residential power systems	10,871					10,871

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
PHOTOVOLTAICS—Continued						
Funding is to be determined based on cycle IV and V guidance from DOE.						
Showcase:						
Army: Proposes to design ($16,000) and construct ($260,000) a photovoltaic charging station in support of a fleet of administrative electric vehicles (see conservation technology—transportation initiative). The station will provide 10 KW of power and consist of 1,000 ft² of collector surface to service 3 vans, 1 pickup truck, 1 compact automobile, and 1 bus (to be used to transport showcase visitors). DOE provided $10,000 in fiscal year 1979 to study this project	16	260				276
Air Force: Proposes to design ($30,000) and install ($120,000) photovoltaic panels on the structure of several water towers, deluge tanks, and near underground gas lines to provide the necessary impression voltage for the installed cathodic protection systems. DOE and Air Force provided $4,000 each in fiscal year 1979 to study this project	30	120				150
Air Force: Proposes to design ($400,000) and construct ($5,000,000) a photovoltaic power system for an electroplating facility to demonstrate alternate energy source use for this energy intensive industrial process. DOE and Air Force provided $9,000 each in fiscal year 1979 to study this project		400	5,000			5,400
Total photovoltaics initiative	46	24,227	5,000			29,273
SOLAR HEATING AND COOLING						
[The purpose of this initiative is to assist DOD in rapidly introducing solar heating and cooling systems into defense facilities, to accelerate the commercialization of solar technology through federal demonstration, and to provide DOD and DOE with reliability and maintainability data on solar systems]						
Solar in Federal buildings demonstration program: DOD has submitted 47 proposed candidates to DOE for consideration for funding totaling $8,835,000 for passive and active solar space heating, cooling, and hot water application, as follows:						
Army: Submitted 9 proposals for offices, warehouses, visitor centers, reserve centers, multipurposes buildings, and a central heating plant	1,682					1,682
Navy: Submitted 5 proposals for a physical education center, recreation center, bachelor quarters, family housing, and administrative facility	1,131					1,131
Air Force: Submitted 7 proposals for a dining facility, dormitory, maintenance shops, recreation pavillion, family housing, swimming pool, and office facility	2,526					2,526
Army-Air Force Exchange System: Submitted 26 proposals for shopettes, launderettes, shopping centers, offices, and a cafeteria	3,496					3,496
Showcase:						
Army: Proposes to install solar hot water heaters for domestic use in selected office buildings that are currently equipped with natural gas-fired heaters which will be used to supplement the solar heaters during periods of high cloud cover or inadequate sunlight. Each building's gas consumption, hot water use, and water temperature will be monitored continuously to evaluate the efficiency of the collector types. DOE provided $7,000 in fiscal year 1979 to study this project	50	65				115

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
SOLAR HEATING AND COOLING—Continued						
Army: Proposes to install 12,000 ft^2 of solar collectors, a 20,000 gal hot water storage tank, and related plumbing for transporting solar heated hot rinse water to 3 chemical cleaning areas and an electroplating shop. DOE provided $7,000 in fiscal year 1979 to study this project. Army has programed $363,000 for fiscal year 1982 to assist in the installation of this equipment	250		400			650
Army: Proposes to construct 6 PVC shallow solar pond modules, each 16 ft wide and 100 ft long, to hold 3 in of water during daylight hours. This shallow solar pond will be sized to preheat an average of 730 gal of water per hour to 127° F in June and 64° F in December. DOE provided $20,000 in fiscal year 1979 to study this project. Army has programed $261,000 in fiscal year 1980 to construct a flat plate collector system for preheating boiler feed water having the same volume and located near the shallow solar pond preheaters above. Performance data on the 2 systems will be evaluated and system cost comparisons will be developed	21	350				371
Navy: Proposes to design ($60,000) and construct ($1,100,000) a solar collector system without storage to function as a preheater of steam boiler makeup water in a central steam heating system. Boiler water makeup is currently preheated from 55°F to 220°F before being injected into 2 50,000 pph boilers that produce saturated steam at 150 p.s.i.g. The solar collector proposed would operate in the low temperature range and thus produce a high efficiency. DOE provided $18,000 in fiscal year 1979 to study this project		60	1,100			1,160
Navy: Proposes to design ($70,000) and construct ($1,400,000) a solar collector system to demonstrate heating and air-conditioning in a Navy exchange with solar assistance. DOE provided $20,000 in fiscal year 1979 to study this project		70	1,400			1,470
Air Force: Proposes to design ($500,000) and construct ($1,400,000) a combination of passive and active solar space and domestic hot water heating systems for 8 (4 woodframe and 4 masonry) residential units and for solar heating and air-conditioning 2 dormitory units. Each of these systems will be instrumented and connected to a basewide energy monitoring and control system (EMCS). DOE and Air Force provided $19,000 each in fiscal year 1979 to study this project	100	100	500	1,000	200	1,900
Air Force: Proposes to design ($200,000) and construct ($600,000) a solar collector system to heat an industrial paint hangar. DOE and Air Force provided $8,000 each in fiscal year 1979 to study this project		200	600			800
Total solar heating and cooling	5,760	845	4,000	1,000	200	11,805
COAL TECHNOLOGY						
Navy: Plans to continue to work with DOE in a cost sharing agreement to install a 50,000 lb/hr fluidized bed boiler at the U.S. Naval Base, Great Lakes, Ill. The purpose of the project is to encourage industry to develop and manufacture industrial sized boilers that can burn coal in an environmentally acceptable manner. DOE provided $4,000,000 to date, and DOD has contributed $50,000	300	300	300			900

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements 1980	1981	1982	1983	1984	Total
COAL TECHNOLOGY—Continued						
Showcase:						
Army: Proposes the design ($2,700,000) and construction ($45,000,000) of a centralized 900,000 lb/hr steam generating facility with 3 coal (lignite) fired boilers. The facility would satisfy the needs of the entire military industrial complex and replace 13 1942 vintage oil-fired boilers. The lignite would be obtained locally. The Army provided $129,000 in fiscal year 1979 to study this project	2,700		45,000			47,700
Navy: Proposes to design ($6,600,000) and construct ($96,000,000) a gas turbine combined cycle power plant with a back-pressure steam turbine generator fired from a low energy gasification facility to supply steam and electricity for base industrial processes, ships moored at piers, and building heating and cooling at 1 Navy base. Currently, the base consumes 9,300 million Btu produced from Navy steam plants and purchased electricity. The combined electrical output of the proposed plant would be 33 MW, and steam output would be 186,000 pph at 150 p.s.i.g. The plant would consume 20 tons of coal per hour to provide low Btu gas for the gas turbine. Waste heat generated from the gas turbine would be used to generate steam, in a waste heat boiler, to be used for the operation of the steam turbine. The evaluation will consider the practicality and constraints of plant construction and operation under a 3d party or a public utility. DOE provided $266,000 in fiscal year 1979 to study all energy options leading to this project		6,600		96,000		102,600
Air Force: Proposes the design ($16,000,000) and construction ($160,000,000) of a 600,000 lb/hr central plant to provide thermal energy, compressed air, chilled water, and cogenerated electrical power for a 3,700 acre Air Force industrial complex with 166 acres of office, industrial, and warehouse space. Air Force provided $249,000 in fiscal year 1979 to study this project	16,000			160,000		176,000
Total coal technology	19,000	6,900	45,300	256,000		327,200
GEOTHERMAL TECHNOLOGY						
Navy: Proposes exploration ($2,000,000), drilling ($1,500,000) and construction ($1,000,000) of a geothermal system to provide space heating for the entire main base complex at the Naval Air Station, Fallon, Nev. Navy will program the construction costs. Navy also proposes exploration and drilling ($3,000,000) leading to private sector construction of a geothermal electric power plant at this site. The probable geothermal resource temperature, based on exploratory well measurements, is in excess of 400°F		1,215	3,375	1,110	800	6,500
Navy: Proposes a study ($500,000), exploration and drilling ($1,750,000), and construction ($1,250,000) to provide geothermal space heating in a demonstration program at the Naval Base, Norfolk, Va. Navy plans to program the $1,250,000 for construction. Probable geothermal resource temperature is 130–150°F		500	750	1,000		2,250
Navy: Proposes exploration ($600,000) and drilling ($2,300,000) leading to private sector construction of a geothermal electric plant in Imperial Valley, Calif. Navy has 3 potential sites (Chocolate Mountain, Salton Sea Range, and El Centro) in this geothermal area		200	400	1,300	1,000	2,900

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
GEOTHERMAL TECHNOLOGY—Continued						
Air Force: Proposes exploration ($350,000,) drilling ($600,000), and construction ($500,000) of a geothermal system to provide heat for a 217,000 Sq.ft ^{2} automated small item warehouse at Hill Air Force Base, Utah. Air Force plans to program the $500,000 required for construction. 1 gradient hole has been drilled to a depth of 3,260 ft, and water was discovered with a 105°F temperature. A reinjection well ($350,000) is required	950	350				1, 300
Air Force: Proposes exploration ($2,400,000), plant design ($250,000), and construction ($5,100,000) of a geothermal central cooling plant or exploration ($2,400,000), plant design ($800,000) and construction ($17,200,000) of a geothermal central electrical plant for Williams Air Force Base, Ariz. The central base area, including flight simulator buildings, hospital, PX, commissary, BOQ and BEQ, community activities area, and offices comprises 850,000 ft.^{2} The total installed load in the central base area approximates a 4,300 ton cooling and 85.6 million Btu/hr heating requirement. Air Force plans to program the plant design and construction costs	950	350				1, 300
Total geothermal technology	950	3, 465	5, 725	3, 410	1, 800	15, 350
CONSERVATION TECHNOLOGY—BUILDINGS						
Navy: Proposes procurement ($900,000) of portable equipment (e.g., pressurization equipment, infrared devices, and air tracing units) for determining energy losses in aircraft hangars, multifamily housing units, and office buildings. Techniques for measuring losses and specific fixes could significantly reduce building energy consumption. Navy will program $200,000 for the purpose of supporting this equipment at Navy sites	200	200	200	200	100	900
Navy: Proposes development of a catalog of generic building energy loss construction components versus current manufactures' information, determination of a heat transfer model accounting for the effects of thermal mass, and determination of causes and fixes of air infiltration into buildings. Navy will provide test location and technical personnel for determination of losses and methodology for correction ($500,000) and DOE would procure components and disseminate catalog ($1,400,000)	300	300	300	300	200	1, 400
Showcase:						
Army: Proposes design ($764,000) and construction ($11,000,000) of an underground administration building with supporting solar systems. This new building would replace 3 1942 vintage buildings which are energy inefficient. This building would be a prototype of the new energy efficient form of architecture called terratecture. It would demonstrate the feasibility and economy of an underground structure since there would be a 60–70 percent reduction in energy usage compared to the same size above ground building. This underground building would also demonstrate the feasibility of using solar energy for heating and cooling an underground structure. DOE provided $104,000 in fiscal year 1979 to study this project	764		11, 000			11, 764
Army: Proposes design ($240,000) and construction ($4,000,000) of an underground computer operations center having 25,000 ft^2 and providing for a 24-hr continuous operation. The facility would also be heated and cooled with a solar energy system. Energy storage would be accomplished with underground storage reservoirs utilized as reversible heat sinks for sunner cooling and winter heating. A small scale solar electric power generating capability will be established to demonstrate the feasibility of a distributed receiver system with 2 applications, a direct current photovoltaic system and an alternating current solar thermal distributed receiver system. DOE provided $104,000 in fiscal year year 1979 to study this project	240	4, 000				4, 240

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
CONSERVATION TECHNOLOGY—BUILDINGS—Con.						
Showcase—Continued						
Navy: Proposes design ($300,000) and installation ($4,500,000) of water source heat pumps using shallow well water heat sinks at 100–150 ft depth with ground water temperature of 60° F. This system would be used to heat and cool 24 2-story, 2- to 3-bedroom townhouses. 2 groups of 12 townhouses would have water-to-air and water-to-water heat pump systems, and a 3d group of 12 would be operated as a control using conventional heating and cooling systems. Records of complete energy use for all 3 groups will be maintained. DOE provided $75,000 in fiscal year 1979 to study this project		300	4,500			4,800
Navy: Proposes developing ($200,000) and evaluation ($337,000) of a computer program to simulate buildings using data collected from 2 computer based energy monitoring and control systems. From the simulation model, various strategies could be computer-tested to provide minimum energy consumption and determine how buildings react under differing conditions. As new algorithms are developed, they can be field-tested on the 2 energy monitoring and control systems and the performance can be proved through the actual data collected in the central monitoring system. DOE provided $10,000 in fiscal year 1979 to study this project		200	337			537
Navy: Proposes to design ($10,000) and install and evaluate ($190,000) microprocessors with programable control devices in buildings that are undersized, remotely located, and lack consistent use and, therefore, would not be incorporated into a central energy monitoring and control system. This project will demonstrate the cost, energy saved, and investment payback of such microprocessors. Data will be analyzed and displayed along with building characteristics to assist government and industry in selectively choosing optimized controllers for various building applications. DOE provided $13,000 in fiscal year 1979 to study this project		200				200
Navy: Proposed to computer analyze and design ($1,000,000) and construct ($18,000,000) a community annual storage energy system (CASES). It would demonstrate the economic and technical feasibility of CASES application at an installation that represents a typical community, having a mixture of energy requirements totaling 575 million BTu, with housing, administration, commercial facilities, etc. The CASES will use 2,700,000 gal concrete lined inground water storager eservoirs for saving summer heat for winter use and the winter cold for summer cooling. This would greately reduce energy consumption compared to the present building heating and cooling consisting of conventional steam, natural gas, and electricity systems. DOE provided $95,000 in fiscal year 1979 to study this project		1,000	18,000			19,000
Navy: Proposes to design ($2,000) and install ($15,000) heat exchangers to demonstrate the efficiency of hot gas recovery from refrigeration systems and 90 tons of air-conditioning systems in an enlisted men's dining facility. The hot gas would be used to produce hot water for cooking and cleaning purposes. Monitoring for a full heating and cooling season is proposed and air-conditioning and refrigeration equipment use profiles will be developed. DOE provided $3,000 in fiscal year 1979 to study this project		17				17

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
CONSERVATION TECHNOLOGY—BUILDINGS—Con.						
Showcase—Continued						
Air Force: Proposes to design ($200,000) and retrofit ($1,000,000) existing nonindustrial facilities with advanced energy-using systems (e.g., sterling engine and organic cycle heat pumps, automatically controlled light systems adjusted to daylight intensity). This project will demonstrate the feasibility and economy of using advanced technology to retrofit existing facilities to reduce energy consumption 40 to 60 percent. DOE and Air Force have provided $10,000 each in fiscal year 1979 to study this project	50	100	500	550		1,200
Air Force: Proposes to design ($400,000) and install ($2,000,000) in various types of residential and nonindustrial facilities (e.g., hosital, visitor center, family housing) all necessary equipment to establish a tie-in to the energy monitoring and control system at the showcase facility. 60 percent of these facilities will be hooked up via dedicated cable or radio link. This project is separate from the other EMCS tie-in contained in the conservation technology-industry section. DOE and Air Force have provided $10,000 each in fiscal year 1979 to study this project	50	100	1,000	1,000	250	2,400
Total conservation technology—buildings	1,604	6,417	35,837	2,050	550	46,458
CONSERVATION TECHNOLOGY—TRANSPORTATION						
Federal electric/hybrid vehicle demonstartion program: The purpose of this program is to demonstrate the use of electric vehicles in fleets and to determine economics and potential applications. Energy generated from nuclear or coal plants can be used to power electric vehicles versus the standard gasoline-powered motor vehicles:						
Air Force: Proposes to purchase ($1,452,000) 110 electric vehicles for a fleet replacement test. This project consists of purchase, operational test data collection/compilation, and recommendations for future electric vehicle use at Air Force bases. Air Force will assume operating expenses of these tests	132	1,320				1,452
Showcase:						
Army: Proposes to procure ($160,000) a large electric-powered bus to be used in on-depot transportation, especially for showcase visitors. This would demonstrate the practicality of electric vehicles for intracity transportation service. DOE provided Army $60,000 to procure 5 electric vehicles (3 vans, 1 pickup truck, and 1 compact car) for administrative use. Army has budgeted $75,000 to evaluate their flexibility and usefulness. The proposed photovoltaic charging station (see photovoltaic initiative) would be used in support of all these vehicles				160		160
Total conservation technology—transportation	132	1,320		160		1,612

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
CONSERVATION TECHNOLOGY—INDUSTRY						
[Replace manual controls with zone thermostatic valves in steam radiators for space heating explosive production buildings]						
Army proposes to test ($250,000) the use of a backpressure turbine coupled to a 20 kW electric generator instead of using regular pressure reducing valves in steam lines. Safety regulations require steam operating temperatures not to exceed 228°F in the explosive processing areas which equates to dropping 100–150 p.s.i.g. steam to about 5 p.s.i.g. This normally lost energy would be converted to mechanical energy through the turbine:						
Army: Proposes to study ($50,000) waste rubber usage. Currently, the used rubber tires and tank-tread pads from Army vehicles are ground up and disposed of as solid waste. Studies are required to determine the economics and potential energy savings of using this rubber waste as boiler fuel when mixed with coal or other fuels. A boiler would be modified for burn test and demonstration ($300,000) starting in fiscal year 1981		50	300			350
Army: Proposes to design ($310,000) and construct ($3,750,000) a plant to demonstrate the use of waste rubber as diesel fuel and carbon black. This is based on an industrial process under development which would convert waste rubber products to a substance resembling No. 2 fuel oil or diesel fuel. Carbon black would be a commercial byproduct			60	250	3,750	4,060
Air Force: Proposes to design ($500,000) and retrofit ($7,000,000) various types of facilities with advanced energy conserving equipment in both the industrial process and environmental control areas. Energy conserving procedures in energy intensive industrial processes would be developed and instituted. The facilities which would be used include a foundry, large piece and small piece assembly and manufacturing lines, a paint facility, an electroplating shop, an industrial heat plant, a high bay hangar facility, and an automated warehouse. DOE and Air Force provided $90,000 each in fiscal year 1979 to study this project	100	200	2,000	2,000	3,200	7,500
Air Force: Proposes to design ($1,000,000) and install ($7,100,000) an enhanced energy monitoring and control system central controller and all necessary peripheral equipment to serve 90 percent of the energy use at the industrial showcase facility. 85 percent of the 166 acres of industrial, warehouse, and office space would be hooked up to this enhanced EMC system via dedicated cable and another 15 percent via radio link. This EMC system would be the central tie for all individual initiatives under the Air Force showcase and would be configured to provide vivid and understandable public displays of the showcase. It would also be used to provide data outputs for reports and fact sheets. Air Force and DOE provided $39,000 each in fiscal year 1979 to study this project. Air Force has programed $838,000 in fiscal year 1981 for this project	100	300	1,350	3,000	3,350	8,100

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
CONSERVATION TECHNOLOGY—INDUSTRY—Con.						
Army proposes to test etc.—Continued						
Air Force: Proposes to design and install several total energy systems (TES) capable of providing all necessary electrical and thermal energy for a number of facilities. Each TES would be designed to reclaim waste heat for space conditioning. All existing environmental control equipment and switch gear would be modified or replaced. The systems would operate as independent systems with automatic switchover to the base utility grid in case of failure. The system would be integrated into the basewide EMCS (see above project). Details concerning these TES follow:						
Design ($1,150,000) and install ($3,500,000) a TES for a radar approach facility. The prime element would be 1st generation fuel cells ($1,000,000) meeting power requirements of 200 kWp and 11,000 Btu/hr maximum. 2 of the necessary fuel cells are scheduled to be provided under the DOE 40 kW fuel cell field test program. DOE and Air Force provided $12,000 each in fiscal year 1979 to study this project			1,150	3,500		4,650
Design ($1,000,000) and install ($4,000,000) a TES for a command post. The prime element would be an advanced gas turbine engine meeting power requirements of 200 kWp and 11,500 Btu/hr maximum. DOE and Air Force provided $10,500 each in fiscal year 1979 to study this project				600	4,400	5,000
Design ($600,000) and install ($5,000,000) a TES for a communications facility. The prime element would be a stirling engine meeting power requirements of 200 kWp and 12,000 Btu/hr maximum. DOE and Air Force provided $14,000 each in fiscal year 1979 to study this project	200	400		1,000	4,000	5,600
Design ($500,000) and install ($4,000,000) a TES for a computer facility. The prime element would be an advanced diesel engine meeting power requirements of 250 kWp and 15,000 Btu/hr maximum. DOE and Air Force provided $12,500 each in fiscal year 1979 to study this project				500	4,00	4,500
Air Force: Proposes to design ($790,000) and construct ($1,800,000) a mobile total energy system (TES) which provides all necessary electrical and thermal energy for a mobile, tactical radar unit. A phosphoric acid fuel cell system would be configured for utilizing thermal energy for equipment cooling and space conditioning. The fuel cell power system would use jet fuel. The power requirement of this unit is 60 kWp. The radar unit would require parallel operation of 2 fuel cell systems to provide for uninterruptable power in the event of a single fuel cell power stack failure. Mobile system hardening would be required	20	70	700	1,800		2,850
Air Force: Proposes to design ($600,000) and install ($2,250,000) a total energy system (TES) which provides all necessary electrical and thermal energy for a remotely sited communications relay center. A 1st generation, phosphoric acid fuel cell would be configured for utilizing thermal energy for equipment cooling and space conditioning. The fuel cell power system would use use jet fuel. The power requirement is 120 kWp. The communications relay center would require parallel operation of 2 fuel cell systems to maximize system efficiency and provide for uninterruptable power in the event of a single fuel cell power stack failure	15	235	700	1,900		2,890
Total conservation technology—industry	964	2,905	6,250	14,550	22,700	47,379

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
WOOD BURNING						
Army: Plans to continue to develop and evaluate the performance of a large wood burning heating plant at Fort Stewart, Ga. DOE provided $300,000 in fiscal year 1979 to determine concept feasibility and design. Army has programed $6,200,000 in fiscal year 1981 for construction. This facility is designed to operate on combinations of coal, wood, and refuse fuels. DOE funds ($100,000 year) are needed in fiscal year 1983 and fiscal year 1984 for testing and performance evaluation. At the completion of preliminary design, escalation of costs indicates a shortfall of $100,000 for design completion and a shortfall of $230 for construction, however	100	230		100	100	530
Showcase:						
Army: Proposes to design ($90,000) and construct ($1,410,000) a facility for production of low Btu gas (350 Btu/1,000 ft^3) from wood waste. This gas would be used as fuel in the showcase installation's main boiler plant. This project would demonstrate the practicality of fueling industrial operations from wood. DOE provided $37,000 in fiscal year 1979 to study this project	90	1,410				1,500
Army: Proposes acquiring the capability ($1,000,000) to harvest waste wood fiber for use as a fuel source. It is anticipated that it would require 3 pieces of equipment: (1) a large tractor capable of uprooting small trees, picking up tree tops and small trees, and feeding them into a chipper; (2) a small chipper capable of chipping tree stumps and tree tops; and (3) a truck to haul the chips to the showcase installation's wood gas production facility, or the wood/coal boiler currently under construction. The showcase installation has over 27,000 acres of pine and low grade hardwood available for harvesting with this equipment. Products of the forest acres would be lumber and pulp supply for paper, both to be sold locally, and wood fuel to be used at the installation. The Army estimates that for every 100 ft^3 of wood removed from the harvesting site, 66 ft^3 of useable wood is left as residue which would be used in this project as fuel. DOE provided $40,000 in fiscal year 1979 to study this project. The Army programed $532,000 in fiscal year 1979 and $8,832,000 in fiscal year 1980 to design and construct the wood/coal boiler which will utilize a portion of this harvested wood		500	500			1,000
Total wood burning	190	2,140	500	100	100	3,030
BIOMASS—GASOHOL						
Showcase:						
Army: Proposes to design ($319,000) and construct ($5,310,000) a pilot production plant to produce alcohol from biomass waste. The alcohol would be used to formulate gasohol and would be used in a test fleet to evaluate the fuel. DOE provided $25,000 in fiscal year 1979 to study this project		319	5,310			5,629
BIOMASS—REFUSE DERIVED FUELS						
Navy: Proposes to complete the installation and testing of a refuse derived fuel plant at Jacksonville, Fla., and to characterize problems associated with the manufacture and burning of various types of refuse derived fuel (e.g., pellet, fluff, etc.). DOE funds required to procure equipment total $2,000,000. Navy plans to fund installation and testing of equipment ($300,000)	1,500	500				2,000

[In thousands of dollars, fiscal years]

Energy technology initiative	Funding requirements					
	1980	1981	1982	1983	1984	Total
BIOMASS—REFUSE DERIVED FUELS—Con.						
Air Force: Proposes to test and monitor the burning of refuse derived fuel pellets in industrial size boilers at Wright-Patterson AFB, Ohio. This facility is currently burning 8,000 tons of refuse derived fuel per year in 1 central heating plant and plans on expanding this practice to its other central heating plant in fiscal year 1980. This project would develop criteria that could be used for retrofit of new refuse derived fuel boiler plants. Air Force plans to program $340,000 from fiscal year 1980–82 for this project and needs an additional $560,000 from DOE	130	370	60			560
Total biomass (gasohol and refuse derived fuel)	1,630	1,189	5,370			8,189
WIND ENERGY						
Navy: Proposes to install wind measuring devices at a large number of sites to obtain specific data and to install and obtain reliability and cost effectiveness data for wind machines at several Navy installations. Navy plans to program $1,000,000 and requires DOE to provide $7,000,000. This project might follow the form of the Federal photovoltaics utilization program in which DOE would supply funds, rank Federal applicants, and act as a clearing house for dissemination of resultant information to the civilian community	1,000	1,000	1,000	2,000	2,000	7,000
Showcase:						
Air Force: Proposes to design ($100,000) and install ($400,000) a hybrid wind energy generation system to provide electric power for a testing facility in the Air Force showcase base. This hybrid system would be 400 kW and would consist of a field of wind generators paralleled with the existing electrical power supply system. It would be integrated within the basewide energy monitoring and control system (see conservation technology industry initiative). DOE and Air Force provided $18,500 each in fiscal year 1979 to study this project	50	100	350			500
Total wind energy	1,050	1,100	1,350	2,000	2,000	7,500

[Enclosure 3]

Recommendations for Enhanced and New Joint DOD–DOE Energy Technology Initiatives

As the largest federal consumer of energy, the Department of Defense has a responsibility to not only request participation in demonstration programs, but also to advise the Department of Energy of the energy technology requirements necessary to accomplish the defense mission. The following recommendations are presented, therefore, in the sense that their implementation would satisfy specific DoD operation and maintenance and research and development planning.

Photovoltaics

The Department of Defense has established the Defense Photovoltaic Program Office at the U.S. Army Mobility Equipment Research and Development Command, Fort Belvoir, Virginia, to coordinate and manage all defense photovoltaic efforts. The Army provides funds for this program management activity. The military departments program research, development, test, and evaluation funds, coordinated through this office for military unique photovoltaic (PV) systems, including, for example, portable replacements for small generators and camouflaged, lightweight panels for back-pack communication equipment. DoE funds for defense photovoltaic projects have been provided from only the Federal Photovoltaic Utilization Program (FPUP), which is a limited-scope program to install PV systems at federal facilities. It relates to only one of the photovoltaic subprograms at DoE, i.e., commercialization. This DoD-DoE initiative should be expanded to address all of DoE's subprogram elements as referred to in the

DoE National Photovoltaic Program Multi-Year Program Plan, dated June 6, 1979. Specific recommendations that are pertinent to subprograms in this plan are as follows:

The advanced research and development subprogram should coordinate the Air Force development work being done in space solar cells with the DoE research and development effort in novel materials, thin film cells, and high efficiency cells.

The technology development subprogram should have DoD evaluate technology options under controlled environments, e.g., photovoltaic array technologies (both flat-plate and concentrator) and balance of system components.

The systems engineering and standards subprogram should have DoD participate in the testing and evaluation of advanced system (e.g., next generation) design concepts. DoE test standards and specifications development would benefit from DoD's long standing role in this field.

The tests and applications subprogram should utilize DoD's operational experience with complete PV systems. This is presently being accomplished in the case of the 60 KW PV installation at Mt. Laguna Air Force Station, California, but should be expanded, at least, to include residential experiments using military family housing units. DoD could thus provide a broad slate of experimental sites for remote, residential intermediate load center and central station applications.

The establishment of the Defense Photovoltaic Program Office demonstrates DoD's commitment to the National Photovoltaic Program. A long-range DoD-DoE plan for action in photovoltaics should be developed to include program goals and budget guidance.

Solar heating and cooling

Department of Defense installations consume 68 percent of the energy consumed in all federal installations. Yet, under the Solar in Federal Buildings Demonstration Program, the DoD will not be able to receive its representative share of demonstration funds. This is due primarily to the funding ceilings that are placed on proposals under Solar in Federal Buildings Demonstration Program rules, published in Volume 44, No. 204 of the Federal Register, dated October 19, 1979. The funding level ranges downward from $1,000,000 for solar process heat applications to $550,000 for active solar space heating, cooling, and hot water to $120,000 for passive solar space heating, cooling, or hot water. In comparison, DOD cost for solar heating and cooling for many projects of $1 to $2 million. Consequently, only a limited portion of DoD solar candidates can be submitted to DoE under these program rules.

Coal technology

Since 1973, the Department of Energy has spent $176 million developing the fluidized bed combustion process in which coal is burned in a mixture of air and limestone, resulting in the generation of heat and electricity. Fluidized bed combustion is one of DoE's research, development, and demonstration programs which has the potential to burn coal more efficiently and economically than conventional coal-fired boilers with pollution control equipment. In order to commercialize this technology, it is recommended that DoE place industrial size demonstration units in DoD facilities where the boiler would be used on a continuous basis and would produce steam for industrial applications. During the fiscal year 1980–1985 time frame, the military departments are planning to program over $500 million in the military construction program to convert over 25 oil-burning facilities to use coal. Due to military construction budget restraints, it is not probable this large cost will be funded, however. DoE assistance to DoD in the form of a fluidized bed combustion technology demonstration program would greatly improve the likelihood that qualified, candidate military oil-burning facilities could convert to, or be replaced with, coal-consuming plants. A DoD-DoE fluidized bed combustion technology demonstration initiative would also assist DoD's compliance with a proposed Economic Regulatory Administration rulemaking, under the Powerplant and Industrial Fuel Use Act of 1978, Public Law No. 95–620 (1978), requiring the DoD to convert major oil-burning heating plants to coal.

Co-generation technology

The existing co-generation program within DoE appears to be limited to technology studies, development and testing of components, and overcoming institutional barriers. It is recommended that DoE develop advanced co-generation systems technology, particularly component technology, applicable to a variety of capacities and economic and environmental circumstances. The program would include funding provisions for demonstration in full scale plants. DoE could profitably utilize DoD facilities as a controlled test bed and subsequently transfer mature technology to the private sector. These DoD facilities would also obtain considerable energy conservation and petroleum substitution benefits in employing co-generation techniques in future power plant systems.

Geothermal technology

The Department of Defense recognizes that a considerable amount of potential geothermal resource lies within lands under its jurisdiction. The surface use of these lands for weapons testing, training, etc., does not lend itself readily to allowing industry access for evaluation of the resource potential. Accordingly, DoD has a program for resource evaluation which includes geologic and geophysical exploration. This effort does not provide for reservoir confirmation which is highly desirable prior to opening DoD lands to geothermal development. Currently, the Department of Energy has no continuing program for reservoir confirmation. It is recommended that such a program be initiated, and include DoD lands, to open up significant new geothermal resources to industry.

Energy monitoring and control systems (EMCS)

The existing DoE EMCS program appears to be somewhat limited in its scope. A more comprehensive, accelerated research, development, and demonstration program is required at the national level. Such an enhanced program would include demonstration of devices ranging from simple mechanical systems to microprocessor-based multi-tier systems. The effort would also include, as required, control, sensor, and communication hardware development, software development, and man-machine interface requirements such as training and maintenance provisions. This comprehensive effort would cover all major categories of control situations. The DoD would participate in the enhanced program through its testing of new energy monitoring and control systems and could provide test beds for new EMCS technologies developed in DoE.

Alternative fuels testing

A new joint DoD-DoE initiative is proposed to test and monitor the effects of alternate fuels, e.g., wood chips and colloidal fuels, on an industrial size boiler at the Wright-Patterson Air Force Base, Ohio. Three central heating plants are being phased down and these could be used. The data collected could be used to develop design, operation, and maintenance criteria for future retrofit applications on new heating plants. DoE could apply this information to the commercial industrial boiler market.

Energy loss diagnostics

Many existing methods for measurement of energy losses in buildings and energy transmission systems are not quantitative, difficult to use, or expensive to purchase and operate. A comprehensive plan to develop and qualify equipments which overcome these disadvantages is desirable. The existing DoE program in this area appears limited. A more aggressive program to provide the necessary technology base in this area would assist the Department of Defense in quantifying more accurately the cost-payback economics associated with conservation retrofit projects.

ENCLOSURE 4

BREAKDOWN OF ENERGY TECHNOLOGY INITIATIVE PROJECT FUNDING REQUIREMENTS AMONG FISCAL YEARS

[Dollar amounts in thousands, fiscal years]

Energy technology initiative	Funding requirements						Percent
	1980	1981	1982	1983	1984	Total	
Photovoltaics	$46	$24,227	$5,000	0	0	$29,273	6.0
Solar heating and cooling	9,256	845	4,000	$1,000	$200	15,301	3.0
Coal technology	19,000	6,900	45,300	256,000	0	327,200	65.0
Geothermal technology	950	3,465	5,725	3,410	1,800	15,350	3.0
Conservation technology (total)	2,700	10,642	42,097	16,760	23,250	95,449	19.0
Buildings	1,604	6,417	35,837	2,050	550	46,458	(9.0)
Transportation	132	1,320	0	160	0	1,612	(.3)
Industry	964	2,905	6,260	14,550	22,700	47,379	(9.0)
Wood burning	190	2,140	500	100	100	3,030	1.0
Biomass	1,630	1,189	5,370	0	0	8,189	2.0
Wind energy	1,050	1,100	1,350	2,000	2,000	7,500	1.0
Total	31,326	50,508	109,342	279,270	27,350	501,292	100.0

ENCLOSURE 5

BREAKDOWN OF ENERGY TECHNOLOGY INITIATIVE PROJECTS WITHIN MILITARY DEPARTMENTS

[In thousands of dollars and number of projects]

Energy technology initiative	Total funding requirements							
	Army	Number	Navy	Number	Air Force	Number	Total	Number
Photovoltaics	$3,684	11	$9,168	16	$16,421	17	$29,273	44
Solar heating and cooling	4,566	25	3,761	7	6,974	22	15,301	54
Coal technology	47,700	1	103,500	2	176,000	1	327,200	4
Geothermal technology	0	0	11,650	3	3,700	2	15,350	5
Conservation technology	22,363	7	27,244	8	45,842	11	95,449	26
Wood burning	3,030	3	0	0	0	0	3,030	3
Biomass	5,629	1	2,000	1	560	1	8,189	3
Wind energy	0	0	7,000	1	500	1	7,500	2
Total	86,972	48	164,323	38	249,997	55	501,292	141
Percent	17	34	33	27	50	39	100	100

ENCLOSURE 6

BREAKDOWN OF ENERGY TECHNOLOGY INITIATIVE PROJECTS AMONG AUTHORIZING FEDERAL PROGRAMS AND AGREEMENTS

Energy technology initiative: Program/agreement—Authorizing project	Projects		Total Funding Requirement	
	Number	Percent	Amount (thousands)	Percent
Photovoltaics:				
Federal photovoltaic utilization program	41		23,447	
Showcase	3		5,826	
Solar heating and cooling:				
Solar Federal buildings demonstration program	47		8,835	
Showcase	7		6,466	
Coal technology:				
Showcase	3		326,300	
Military department, DOE agreement	1		900	
Geothermal technology: Military department, DOE agreement	5		15,350	
Conservation technology:				
Showcase	22		91,307	
Military department, DOE agreement	3		2,690	
Federal electric/hybrid vehicle demonstration program	1		1,452	
Wood burning:				
Showcase	2		2,500	
Military department, DOE agreement			530	
Biomass:				
Military equipment, DOE agreement	2		2,560	
Showcase	1		5,629	
Wind energy:				
Military department, DOE agreement	1		7,000	
Showcase	1		500	
Total:				
Federal programs	89	63	33,734	7
Showcase	39	28	438,528	87
Military department, DOE agreement	13	9	29,030	6
Total	141	100	501,292	100

Question. Summarize your ECIP to date. How much have you saved in terms of dollars and energy and how do these figures compare with estimated savings?

Answer.

Appropriation—enacted fiscal year 1976—fiscal year 1980

Army	$203,726,000
Navy	197,143,000
Air Force	162,496,000
Defense Agencies	6,031,000
Family Housing	62,127,000
Guard/Reserve	14,104,000
Total	645,627,000

Calculated annual energy savings, based on the full programs (FY 76–80) as approved by the Congress, are 37.3 Tera (1012) Btu. This is equivalent to the energy of 6,403,433 barrels of oil each year.

Calculated total annual dollar savings fiscal year 76–80 are $150.9 million. Program amortization (simple amortization) for this period is 4.3 years.

Fiscal year 1979 is the last year for which we have complete energy use data. Fiscal year 1979 installations usage is down 5 percent from fiscal year 1975 and 2.4 percent from fiscal year 1978. Calculated ECIP savings in barrels of oil equivalent (BOE) through fiscal year 1979 were 5.4 million. The 5 percent reduction is about 5.4 million BOE. We recognize that this 5 percent figure includes administrative reductions as well as ECIP. However, considering that there were some ECIP projects cancelled in the fiscal year 1976–79 period and that many of the fiscal year 1979 projects were not constructed and operational in fiscal year 1979, we believe there is a reasonably good correlation between estimated and actual energy reduction. We have directed the military departments to submit an annual report on the ECIP. The first report for fiscal year 1976–79 has been received but we have not completed our review so that we are not able to provide a complete comment on the question of calculated as opposed to actual energy reductions. We would expect to be able to furnish a better analysis of this question with the fiscal year 1982 MCP. Our calculated energy savings are based on universally accepted practices by the engineering profession and we are using the same techniques and methods used throughout the private sector. We are convinced that our ECIP program, based on energy calculations at the time of final design, has a confidence factor of at least 90 percent.

Question. You have been criticized by the GAO for diverting ECIP funds and not executing ECIP projects as authorized. Discuss this situation and provide a list of ECIP projects since fiscal year 1978 that have not been executed and explain the reason for not pursuing the projects.

Answer. During the hearings on the fiscal year 1979 MILCON program, questions were raised as to the validation of the calculated savings of the Energy Conservation Investment Program (ECIP) effort. For this reason the DASD (I&H) requested the Defense Audit Service (DAS) to conduct a review of the fiscal year 1976 through fiscal year 1978 ECIP. Copies of this review (DAS Audit Report No. 79–054) were made available to the Senate and House Armed Services and Appropriations Committee. The DAS report indicates some areas of concern primarily with the first two years of the ECIP. On October 21, 1977, the DASD (I&H) issued new guidance which included a number of improved procedures. Consequently it is considered that beginning with the fiscal year 1979 program a number of the early problems have been eliminated. The DAS review indicated that some ECIP projects were cancelled or reduced in scope for various reasons. It should be recalled that the ECIP was initiated in the middle of the budget cycle and there was not time to make the usual preliminary engineering studies. Consideration was given this point prior to directing the program to begin in fiscal year 1976. It was concluded that energy conservation was too important to delay construction projects for a whole year. Furthermore, it was expected that initial projects would be relatively simple as to the engineering required and this view was essentially correct. Nevertheless, during final design it was determined that there were projects which should be reduced in scope or in some cases cancelled. Based on final data there was no other responsible alternative. We have established minimum energy savings to cost ratios expressed in Mega Btu per $1,000 of investment and we feel the military departments were correct in dropping projects which did not meet this minimum requirement. Most ECIP work is retrofit which is much more difficult to cost than new construction and only in final design stage can the energy to cost ratio be definitely proven.

The DAS identified some projects which had been cancelled in order to provide funds to complete other projects. Six such projects at two Air Force bases were cancelled to support pollution abatement projects. The DAS noted that such reprogramming is legal but does not save energy. New guidance has corrected this problem.

The DASD (I&H) has issued additional guidance to the military departments to strengthen the ECIP and to eliminate the basic problems identified by the DAS.

ECIP CANCELLATIONS

Location	Project	Amount (thousands)	Reason for cancellation
ARMY			
Fiscal year 1979:			
Fort Campbell	277	$380	At final design failed to meet minimum energy to cost ratio.
Fort Devens	150	268	Do.
Fort Benjamin Harrison	104	2,359	Do.
Fort Knox	302	401	Do.
Fort Lewis	402	115	Do.
Picatinny Arsenal	99	334	Do.
Rock Island Arsenal	72	1,957	Do.
Fiscal year 1980:			
Fort Campbell	278	220	Do.
Fort Benjamin Harrison	111	1,650	Do.
Red River Depot	96	240	Scope revised larger project in fiscal year 1981 at $1,300,000.
NAVY			
Fiscal year 1979:			
NS Pearl Harbor	P246	890	At final design failed to meet minimum energy to cost ratio.
FTC San Diego	P186	1,400	Do.
NTTC San Diego	P201	1,550	Do.
Fiscal year 1980: NAEC Lakehurst	P184	200	Do.
AIR FORCE			
Fiscal year 1979: None.			
Fiscal year 1980: None.			

SOLAR

Question. You are proposing a change in 10 U.S.C. 2688. Why?

Answer. The proposed change will permit the use of Solar to be determined on the basis of energy saved annually as it relates to dollars invested rather than the current method. This method is being proposed to emphasize energy savings.

Question. Would the practical effect of the changes you are proposing to 10 U.S.C. 2688 increase or decrease the likelihood of a solar system being built?

Answer. The proposed system will permit solar to be used only where there is a definite indication that energy saved for the dollars invested meets the proposed criteria. This system will decrease the number of projects that will have solar.

Question. Last year you predicted 100 new solar energy projects would be undertaken each year. Have you updated your December 1978 solar report? How many new solar projects have you started?

Answer. The 1978 solar report has been updated and will soon be printed. This year's report indicates that 161 projects are now in the pipeline.

	This year	Last year
Under design	87	55
Under construction	39	26
Operational	35	26
Total	161	107

This indicates that 54 new projects have entered some phase of development since last year's report was issued.

Question. Last year you made several forecasts with respect to the impact of Section 804 (number of AE firms doing solar analyses, dollar value of AE contracts doing solar analyses, dollar value of solar systems analyzed, dollar value of construction including solar systems, impact on family housing, etc.) Would you review those estimates, update them if necessary, and discuss your actual experience during the past year compared to your estimates?

Answer. Our estimates of the impact of Section 804 have been reviewed and an updated version follows:

A/E impact estimates.—We believe that as projection our estimate of $30 million is in the ball park. It must be remembered that we are now required to evaluate all MilCon projects. The number of firms that will be involved will remain at about 300.

Value of solar systems being analyzed.—Again last year's estimates are considered appropriate. It is estimated that for fiscal year 1981 approximately $50 million in potential projects are being or have been analyzed. From those analyzed to date however only $12.8 worth of projects have been found to be cost effective.

Estimated construction cost of facilities on which solar studies will be performed for fiscal year 1980, 1981 and 1982 will probably be about $2 billion, up slightly from last year because of an anticipated increase in program size.

Question. In the fiscal year 1981 budget request:

a. How many projects include solar systems?

b. What is the estimated dollar value of the solar systems in these projects?

c. What is the average pay back period for the solar investment?

Answer.

a. Sixty-six projects in the fiscal year 1981 program currently require the use of solar energy systems. Thirty of these are Army and thirty-six are Navy. The Air Force has identified another 40 projects as potential candidates for solar but have not budgeted for these. If their analysis standup they will attempt to fund them within the requested funds.

b. The estimated value of the 66 projects in the program is $12.8 million. If all of the Air Force potential projects make the cut this could add approximately $8 million.

c. The average pay back for these projects under the rules of Public Law 96–125 is 17.6 years.

Question. How much money has been appropriated to DOE for solar retrofit under the National Energy Act? How much of this has gone to DoD?

Answer. $45 million has been appropriated to DOE for use in the Solar Federal Buildings Demonstration Program. DOE plans to allocate $35 million of these funds this year holding $10 million in reserve to lower inflation and other unforeseen cost. DOD has requested $10.6 million but has received no authorization or funding to date.

Question. Has the DOE settled on criteria to be used in life cycle costing of solar systems? If so, compare DOE criteria with that currently being used by DOD and comment on whether or not each particular criteria increases or decreases the likehood of solar being cost effective.

Answer. Yes, DOE's criteria was published in the Federal Register on January 23, 1980. There are two cost effectiveness values defined in the criteria as follows:

1. Savings to Investment Ratio (SIR) where

$$\text{SIR}=\frac{(\text{Cost of Energy Saved})-(\text{Non Energy O\&M cost})}{(\text{Invest cost})+(\text{Replacement Cost})-\text{Salvage cost}}$$

   An SIR value of 1.0 or greater required.

   An SIR value less than 1.0 indicates system cost cannot be amortized within system life.

2. Simple Pay back Period (SPB), in years. Uses constant Dollars (No fuel price increase or discounting used).

$$\text{SPB}=\frac{(\text{Investment Cost})}{(\text{Energy Savings/year}-\text{Maintenance Cost/year})}$$

The DOD procedure differs in that it considers only the recoupment of investment cost in fuel savings over the life of the structure (25 years).

$$\text{Cost effectiveness}=\frac{(\text{Investment Cost})}{(\text{Energy Savings/Dollars})}$$

Each of the DOE procedures reduces the likelihood of solar being cost effective.

Question. On page 55 of your statement you say "The definition of cost effectiveness included in the Public Law 96–125 does not provide for the inclusion of life cycle cost analysis." This is nonsense. Quoting from the conference report on Public Law 96–125, "Section 804 . . . requires life cycle costing of solar systems in all new facilities." Why do you continue to resist Section 804?

Answer. The language in the report is in conflict with the language of the law. The law as currently written does not allow for the use of non-fuel, O&M cost, replacement cost or discount factors which are included in normal life cycle cost procedures. We are not fighting the use of solar systems per se. We believe however that it is in the best interest of the government to evaluate these systems either on a life cycle cost basis or on the method proposed for the fiscal year 1981 legislation.

BASE REALIGNMENTS

Question. In the Spring of 1979 you announced a list of proposed base realignment actions. What is the current status of these actions?

Answer. A total of 87 proposed realignment actions affecting 163 military installations and activities were announced in the March 1979 package. Six of these were new proposals for study, one of which has been completed. The remaining five studies involving consolidation of cryptologic training at Keesler AFB, MS/Corry Station, FL; closure of the Active AF portions of Duluth, MN International Airport and Hancock Field NY; closure of the depot mission at the Defense Construction Supply Center, Columbus, OH; and closure of the Defense Depot, Ogden, UT, are ongoing and are expected to be completed later this year.

Twenty decisions to maintain the status quo as a result of previously announced studies were included in the package. Of the remaining 61 actions, 30 are in various stages of implementation. Decisions on the remaining actions are under review with additional documentation such as EIS's being developed for several actions as a result of recent legislation.

A final decision to maintain the status quo at Loring AFB, ME and to defer the action at Ft Dix, NJ have also been announced.

Question. Your statement indicates that there is "no new base closure package announcement planned this year." Why? Does this represent thinking that perhaps the base structure has been reduced to the point where further significant reductions are unlikely?

Answer. No sir, as a review of the reports on the cost of our domestic base structure will attest. The hiatus only reflects what you might call one of our normal periodic breathing spells. We have a large number of actions underway and it is not productive to overload the system.

Senator **Hart**. Your success at reducing headquarters staffs over the past several years has been noteworthy in the Federal Government. Would you review (with details for the record) how many headquarters positions have been eliminated over the past five years? How many have been eliminated from Pentagon staffs?

Mr. **Fliakas**. The Department of Defense has had a program for identifying and managing the number and size of its management headquarters staffs, since 1973. Management headquarters are those organizations which are primarily engaged in developing and issuing policies and providing policy guidance, reviewing and evaluating program performance, allocating and distributing resources, and conducting mid- and long-range planning, programming, and budgeting. When speaking of reductions to headquarters staffs, it is these organizations, as opposed to operating headquarters such as Brigade or Division staffs, to which we generally refer.

Since the inception of the Management Headquarters Program, the Department of Defense has achieved significant reductions in the size of its management headquarters staffs. This has been achieved primarily through the realignment of functions and the elimination of personnel spaces. The progress made in reducing the size of management headquarters within the Military Departments during this period is reflected on this chart, which I am happy to provide for the record.

MANAGEMENT HEADQUARTERS REDUCTIONS

	Fiscal year—			Net reduction
	1973	1977	1981	
Department of the Army	31,712	20,505	20,222	11,490
Department of the Navy (including the Marine Corps)	30,919	17,767	18,664	12,255
Department of the Air Force	37,920	26,199	25,594	12,326

As the figures indicate, the most significant reductions took place in the early years of the program. In recent years, we have primarily been involved in refining and building upon past accomplishments, while at the same time meeting new requirements generated by the ever-changing world situation and internal and external demands on DoD organizations.

Your question regarding Pentagon staffs, I assume, refers to what we categorize as Departmental Headquarters—that is, the top staffs of the Department of Defense (the Office of the Secretary of Defense, the Organization of the Joint Chiefs of Staff, and the Service Secretariats and Staffs. Secretary Brown has given particular attention to effecting reductions in Departmental headquarters. Upon assuming office in January 1977, he restructured the Office of the Secretary of Defense and the Military Department Headquarters to streamline operations and restrict their activities to top level policy development, resource management, program evaluation, and long-range planning. This next chart, which I also submit for the record, depicts the reductions which have been effected in the size of Departmental (Pentagon) Headquar'ers since January 1977.

DEPARTMENTAL HEADQUARTERS REDUCTIONS

	On-board January 1977	Budget request fiscal year 1981	Net reduction
Office of the Secretary of Defense	2,065	1,620	445
Organization of the Joint Chiefs of Staff [1]	1,295	1,297	(2)
Department of the Army (secretariat, service staff and staff support activities)	5,377	4,121	1,256
Department of the Navy (secretariat, CNO staff, Marine Corps headquarters)	3,594	3,148	446
Department of the Air Force (secretariat and service staff)	4,610	3,250	1,360

[1] The OJCS was excluded from the 1977 reduction effort because it had initiated a 15-percent reduction the previous year.

NUCLEAR WEAPONS SECURITY

Question. In the past, this Committee has expressed great concern with your efforts to upgrade the security of nuclear and chemical weapons. Would you discuss the status of your upgrade program in terms of numbers of sites?

Answer. In CONUS, all [deleted] MILCON funded sites are either complete or under construction. Overseas sites are funded by a combination of MILCON and NATO Infrastructure funds for physical construction and Other Procurement Appropriation funds for the Intrusion Detection System (IDS). All [deleted] Army and [deleted] Navy MILCON funded construction projects, less IDS for overseas Army sites, are either completed or under construction. One MILCON funded Air Force site of [deleted] remains to be awarded in calendar year 1980. With the award of the Air Force site, construction for all [deleted] MILCON funded sites will be either in progress or complete. The remaining [deleted] overseas projects are NATO Infrastructure funded. Funds have been approved by NATO in Slices 28, 29, and 30 and are programmed for Slice 31. Construction has yet to start on these sites.

[Deleted] are being improved at Navy and Air Force sites both in CONUS and overseas. Army sites in CONUS, which are under construction, also include upgrade of [deleted]. A prototype [deleted] system is presently under construction in Europe. After evaluation of the prototype, Army and selected Air Force sites will improve their existing [deleted] system.

Of the [deleted] chemical storage sites to be improved, physical construction for all but [deleted] sites is either completed or under construction. [Deleted] site is scheduled for a 1980 award. The other [deleted] sites have been deferred pending resolution of studies involving possible consolidation and reexamination of requirements.

The Committee is furnished a detailed classified semiannual report which lists each site and its status. The latest report was submitted in March 1980.

Senator HART. How much will the security upgrade at Rocky Mountain Arsenal cost as a result of the Weteye decision? Where do you intend to get authorization and funds?

Mr. FLIAKAS. A project to accommodate the entire requirement is presently being developed by the Dept. of the Army. Design of the storage facility requirement will be initiated as quickly as possible. Reasonably accurate cost estimates for the entire project have yet to be developed. As soon as the requirements have been determined, a design and construction schedule will be determined. When this is available immediate action will be taken to provide funding using the most expeditious alternative. Efforts will also be taken to determine if there are critical near term improvements which can be extracted from the larger project and accomplished in a more timely fashion using either operation and maintenance or Exigent Minor Military Construction Funds.

EXPLOSIVES AREA ENCROACHMENT

Question. In its report on the FY-80 bill, the Committee asked that the issue of encroachment around areas storing explosives be studied and a report on the situation be provided the Committee by March 1, 1980. Where does this effort stand? (Provide a copy for the record.)

Answer. The requested report was forwarded to the Committee on March 18, 1980. A copy of the report follows for the record.

MARCH 18, 1980.

Hon. GARY HART,
Chairman, Military Construction and Stockpiles Subcommittee, Committee on Armed Services, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: In its Report No. 96-209 on the Military Construction Authorization Bill, noting a request for authorization to purchase land for explosives safety clearances, the committee requested a report on the "scope and extent of this problem to include the number of installations now operating under a waiver of explosive safety distance criteria and an estimate of the cost to correct the situation.

The requested report has been prepared by the Services and reviewed and compiled by the Department of Defense Explosives Safety Board. It is attached for your information as requested.

Sincerely,

E. A. ROGNER.

Attachment.

DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD,
Alexandria, Va. February 6, 1980.

Memorandum for: Deputy Assistant Secretary of Defense (I&H).
Subject: Installations Operating Under Waivers of Explosives.

1. Reference is made to Memorandum for the Chairman, DOD Explosives Safety Board, dated 16 Aug 79, subject as above.

2. The desired information was obtained from the military services by Report Control Symbol (RCS) DD-M(OT) 7922 at a compilation cost of $19,514. Data received from the Department of the Army is at TAB A, Department of the Navy at TAB B, and Department of the Air Force at TAB C.

3. In summary, significant information for each of the military services follows:

a. Department of the Army.—There were three off-base exposures; e.g., a waiver at Ft. Monmouth, NJ, which can be rectified with little or no costs; a correctable ammo workshop problem at Aberdeen Proving Ground, MD; and a storage problem which exposes Mississippi River traffic at Savanna Army Depot that can be corrected by a rewarehousing plan. Complete correction of the three exposures can be effected at less than $200,000.

b. Department of the Navy.—Eight of the 21 off-base exposures reported by the Navy indicate waterfront exposures involving ammunition handling and homeporting requirements; seven relate to storage magazine hazard arcs incumbering off-base exposures; five relate to operating facilities which create off-base exposures; and one involves uninhabited areas outside the base boundary requiring no corrective action. Planned corrective actions include MCON projects, land easement/transfer/exchange/acquisition, relocation of on-base facilities, downloading/rewarehousing ammunition stocks, or accepting off-base exposures as that being restricted for farmland, wildlife refuges, or similar purposes. Two off-base exposures are pending results of study/tests for future planned course(s) of action. Seven off-base exposures have been cited for MCON projects totalling approximately $51M.

c. Department of the Air Force.—Nineteen air bases operating under 47 waivered conditions involved exposure to off-base property. The approximate cost for correction of these conditions ranged from $13.15M to $18M. Approximately 1/3 of the waiver conditions involved magazine storage of munitions and the remaining 2/3 involved operating facilities such as alert hangars, hot cargo pads (load/unload), alert aircraft parking and similar activities. Proposed corrective actions consisted of MCON projects, relocation of operating facilities, perpetual/restricted easement, land exchange/interservice agreements, and adjustments of stocks in storage.

(Includes TABs A, B, C).

R. B. CUNNINGHAM.

(For Alton W. Powell, Colonel, USAF, Chairman).

DEPARTMENT OF THE ARMY

OFF-BASE QUANTITY-DISTANCE VIOLATIONS

Installation/location	Acres (cost)	Violation on non-Federal property	Corrective action		
			None planned	Planned	Cost$_s$
Fort Monmouth, N.J.	Approximately 2 acres, 10 private residences between boundary fence and College Ave., Eatontown, N.J., (cost estimate, $650,000).	Fragment distance for class 1.1 explosives extends approximately 600 ft into a residential area of Eatontown, N.J.	Type and amount of explosives stored in buildings T-687 and 694 do not present a significant hazard. Class 1.1 materials are bulk, non-fragment producing type utilized by the 54th Ordnance Detachment, Fort Monmouth, and do not exceed 300 lb net explosive weight. A list of materials and the amount stored is attached. Building T-687 is an igloo type magazine constructed of corrugated rolled structural steel plate, earth-covered on 3 sides. Materials stored in the structure are segregated into 3 groups with groups separated by 3 ft high sand bag dividers. Building 694 is a small bunker constructed of concrete with earth cover on 3 sides. Only blasting caps are stored at this location! At each location, the open side does not face toward the installation boundary.	None	NA
Aberdeen Proving Ground, Md.[1]	N/A	Existing ammunition surveillance workshop building 797 is 250 feet from installation boundary (Bush River). Explosive limit for this building is 200 lb class 1.1 or 1.2 which may require a 1,250 ft or 1,800 ft inhabited building distance based on fragmentation hazard, depending on specific ammunition present in building.	N/A	Construction of a new ammunition surveillance workshop was included as part of $6,800,000 MCA project "ammunition/explosive storage facility" submitted to HQDA by DARCOM as our priority No. 15 mission support project for the fiscal year 1982 programs. Due to MCA budget constraints, project has since been slipped to fiscal year 1984. Consideration is now being given to submission of the $106,000 workshop project separately as an exigent minor military construction project.	$106, 000

See footnote at end of table.

DEPARTMENT OF THE ARMY—Continued

OFF-BASE QUANTITY-DISTANCE VIOLATIONS—Continued

Installation/location	Acres (cost)	Violation on non-Federal property	Corrective action		
			None planned	Planned	Costs
Savanna Army Depot Savanna, Ill.[1]	NA	Inhabited building distance arcs from existing ammunition/explosive storage sites (igloos, outdoor sites, and loading docks) extend beyond installation boundary. In this case the arcs include the adajacent Mississippi River and portions of Corps of Engineers owned bottom land on the Iowa side of the river. The Mississippi supports significant water traffic in this area, however public traffic route distance Arcs do lie within installation boundaries	NA	1. Rewarehouse explosives to sites with sufficient distance to installation boundary, and 2. Reduce authorized class 1.1 explosive limits on storage locations with insufficient distance to boundary (see note), and 3. Utilize sites with insufficient class 1.1 distance for storage of lesser classes of ammunition, i.e., classes requiring less distance to boundary.	86,750

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[1] While compliance with quality distance requirements without exemption will not result in loss of storage space, this action will reduce the maximum class 1.1 net explosive weight storage capability by 5,017 tons. The class 1.1. explosive limit of 55 sites will be reduced significantly (100,000 lb or more). This poses no problem under present workload forecasts, but under "full load" conditions, storage planning problems could develop, depending on amount of class 1.1 items received for storage.

OFF-BASE EXPLOSIVE SAFETY QUANTITY DISTANCE VIOLATIONS

NAVY AND MARINE CORPS FACILITIES (CONTINENTAL UNITED STATES, TERRITORIES AND POSSESSIONS)

Installation/location	Acres (value)	Violation on non-Federal property	Corrective action	
			None planned	Planned
Naval Submarine Base, New London, Conn.	2.5 acres ($25,000)	ESQD arc from pier 10 extends west across Thames River onto Mamacoke Hill.	Findings of the maximum credible event tests are expected to reduce size of ESQD arc thereby eliminating violation.	
Do	3 acres ($3,000,000)	ESQD arcs from piers 31 and 32 extend west across Thames River.	do	
Naval Submarine Base, State Pier, New London, Conn.	50 acres ($100,000,000 plus) area in ESQD arc primarily commercial with some residential.	ESQD arcs around moored tender extend over private property on both sides of Thames River.	The major portion of encumbered property has been developed commercially and its procurement would be financially prohibitive. Accordingly, such action is not contemplated. It is expected that the Navy's explosives safety test program will permit reduction in the explosives hazard arc and concomitantly the amount of property encumbered by exexplosives arcs. However, a smaller portion of the property encumbered by the hazard arc has been developed for residential use. There are 10 frame houses approximately 40 yrs old in this area. The State of Connecticut is seeking to purchase this property and remove the residences from the hazard encumbrance.	

OFF-BASE EXPLOSIVE SAFETY QUANTITY DISTANCE VIOLATIONS—Continued

NAVY AND MARINE CORPS FACILITIES (CONTINENTAL UNITED STATES, TERRITORIES AND POSSESSIONS)—Continued

Installation/location	Acres (value)	Violation on non-Federal property	Corrective action	
			None planned	Planned
Naval Weapons Station, Yorktown, Va.	80 acres ($400,000)	ESQD arcs associated with magazines 153, 157, 161 and 163 extend beyond station western property line.	Private property is swamp land and completely unuseable at this time. If required in the future, magazines will be downloaded to contain ESQD arcs on Navy property.	
Allegany Ballistics Laboratory, Cumberland, Md.	208 acres ($420,000)	ESQD acrs associated with explosives manufacturing building in eastern portion of the original station area extent beyond property line.	Restrictive easement limiting inhabited functions has been acquired.	Continuation of easement is planned for duration of requirement.
Naval Weapons Station, Charleston, S.C.	15 acres ($300,000)	ESQD arcs from magazines 268, 269 and 270 extend beyond station on western boundary.		Land acquisition project under preparation for inclusion in MCON program at earliest date.
Naval Air Station, Key West, Fla	12 acres ($30,000,000)	ESQD arcs from pier Delta fall over non-Government owned land as well as harbor areas.		Investigate possibility of moving high explosives handling operation to another pier thereby eliminating the ESQD arc extending over private and commercial development.
Naval Weapons Station, Concord, Calif.	176 acres. Upon execution of P-197, 159A will remain under arc. Area remaining owned by 2 commercial companies who have manufacturing facilities on the property.	ESQD arcs from pier 4 extend over privately owned explosive manufacturing plants.		Land owned and occupied by 3 chemical companies. This land was excluded in the act of Congress authorizing acquisition of Port Chicago. 17.6 acres belonging to Collier Corp. available for purchase. MCON P-197 U.P. estimated cost $2,000,000 proposed for partial elimination of violation.
Do	58 acres. Area under ESQD arc occupied by chemical plant, steel plant, industrial staging area, public highways and railroads.	ESQD arcs at X-ray facility at Pittsburgh extend over United States Steel, Dow Chemical, etc.		MCON P-143 U.P. for relocation of X-ray facility to station proper will eliminate violation ($3,200,000).
Naval Air Station North Island, San Diego, Calif.	2.75 acres ($2,500,000)	Privately-owned land in city of Coronado lies within ESQD arc from Berth OSCAR. Under waiver.	Because of operational necessity for continuing use of berth OSCAR for explosives handling and the cost of acquiring expensive private residences, a solution appears prohibitive.	

Pacific Missile Test Center, Point Mugu, Calif.	100 acres. Located in the flood plain/estuary devoted to game preservation.	ESQD arcs from 11 magazines extend onto the Ventura Country Game Preservation Association property (a private duck hunting club).	Land area is an uninhabited estuary. ESQD violation not considered unacceptable to wildlife refuge.	
Marine Corps Air Station, El Toro, Calif.	18 acres ($1,500,000)	ESQD arc from ordnance handling area at runway 16L extends beyond property line at NE portion of station.		MCON P-277 fiscal year 1985 land acquisition to eliminate violation. Estimated cost of acquisition ($1,500,000).
Pacific Missile Range Facility, Hawaii Area. Barking Sands, Hawaii.	12.6 acres ($251,000)	ESQD arcs from red label handling area extend over uninhabited sugar cane fields.		MCON P-408 will relocate red label area thereby eliminating violation ($1,100,000).
Do	71.2 acres ($1,350,000)	ESQD arcs from DOE magazine areas and missile launch area extend over uninhabited sugar cane fields.	Privately-owned farm land. No corrective action as long as land use remains in sugar cane production.	
Do	325 acres ($4,900,000)	EQSD arcs from Kamokala Ridge magazine area extend over State-owned mountains.	State-owned uninhabited land. Area under arc rugged mountainous terrain.	
Naval Magazine, West Loch Branch, Lualualei, Hawaii.	770 acres ($15,700,000)	ESQD arcs from explosive handling piers extend over private sugar cane field.		MCON P-009 fiscal year 1980 land acquisition ($15,700,000).
Do	202 acres ($4,100,000)	ESQD arcs from magazines extend over State-owned mountain land.		Planned elimination of violations by land transfer. Transfer action in progress.
Naval Air Station, Barbers Point, Hawaii.	3.5 acres ($150,000)	ESQD arc from missile shop extends over Campbell Estate property.		MCON P-118 UP for relocation of missile shop will eliminate violation ($3,000,000).
Naval Magazine, Guam	83 acres ($17,400,000) (Commercial port of Guam).	ESQD arc from explosive handling at Hotel Wharf falls over Commercial port of Guam.		MCON P-620 UP for ammunition wharf facilities. Estimated construction cost of ammunition wharf ($25,000,000).
Do	551 acres ($8,300,000)	ESQD arcs from magazine storage areas extend over land owned by Government of Guam and privately owned land.	Encumbered private land is uninhabited mountain land. No corrective action presently planned however, if development potential for area improves, the potential for magazine downloading or land acquisition would be investigated.	Guam Land Use Plan 1977 has identified encumbered Government of Guam land for land exchange action.
Naval Air Station, Agana, Guam	4 acres ($50,000)	ESQD arc from AUW shop encompasses ¼± mile of public highway, which cuts across Navy property.	Highway right-of-way is beyond public highway ESQD arc distance.	

Note: UP is unprogramed.

OFF-BASE EXPLOSIVES STORAGE QUANTITY-DISTANCE (Q-D) SAFETY CLEARANCES

[Beyond base boundary—not owned in fee or perpetual easement by the Air Force]

Installation/location	Description	Option[1]	Corrective action	Amount (thousands)
COMMAND (a) AAC				
Elmendorf AFB	Q–D from explosive sources in storage bunkers extends into Army (Fort Richardson) reservation.	6	Apply for Army areas involved. (275 acres)	(2)
Eielson AFB	Q–D from explosive sources in storage bunkers extends into Army (Yukon Training Range).	6	Apply for Army area involved. (480 acres)	(2)
Galena Airport	Q–D from explosive sources extends across civilian runway. Sources are: alert hangar, hot cargo pad and ammunition storage.	6	Galena including runway, confined by 12 ft dike—no place to move.	NA
King Salmon Airport	Q–D from explosive source extends across civilian runway from the alert hangar.	3 and 4	Program a new alert hangar away from the runway—move the existing hangar.	(3)
COMMAND (b) AFLC				
Kelly AFB, Tex.	Q–D from STAMP/STRAPP explosives loading/holding area on lease land	1 or 3	2.7 Acre/perpetual easement	$14.4
Robins AFB, Ga.	Q–D from parked SAC alert aircraft over private-owned land	1	Relocate Fac 809, STAMP/STRAP loading/holding area 19.6 acre/fee	25.0 9.8
	Q–D from explosive storage area extends over private owned land. 127 plus acres required to eliminate violation.	6	Proposed land exchange	0
Tinker AFB, Okla.	Q–D from explosives storage over privately-owned land subject to encroachment by development.	1	22 acre/fee	264.0
Do	do	1 or 3	494 acre/fee 6 igloos, 2 loading/unloading pads, 1 holding pad, 2 hard stands.	2,600.0 7,500.0
COMMAND (c) AFSC				
Cape Canaveral Air Force Station, Navy Wharf at Port Canaveral.	Q–D (inhabited building distances) required by DOD directive 5154.48 for piers and wharfs encroaches on the civilian wharf across the port channel when a Navy fleet ballistic missile is loaded or off-loaded from a submarine at the southeast berth.	6	Operations are and will be kept to a minimum by utilization of another missile handling wharf but exemption must remain due to high use rate of wharf and ordnance handling. It is not possible to move Navy or Civilian wharfs since port limits and waters are defined and permanently established.	0
COMMAND (e) MAC				
Altus AFB, Okla.	Q–D for SAC alert parking spots was over leased land. Spots not currently used. Class 1.1 Q–D requirements now put zone over land not leased.	1	Approximately 66 acre/easement	29.5

Kirtland AFB, N. Mex.	Q–D for hazardous cargo pads Nos. 2 and 3 partially over primary instrument runway (Albuquerque International Airport), secondary runway and parallel taxiway.	3	Construct new hazardous cargo pad (proposed fiscal year 1985 MCP item).	1,583.0
Travis AFB, Calif.	Q–D from AC on hazardous cargo pad extends over land not leased when class 2.1 explosives are involved.	1	Approximately 30 acre/easement	8.8
McChord AFB, Wash.	Q–D from explosive storage source extends beyond base boundary onto an uninhabited area of Fort Lewis Army Reservation.	6	Interservice agreement between Air Force and Army	0
COMMAND (f) PACAF				
Hickam AFB, Hawaii	1. Hawaii Air National Guard facilities Q–D explosives source over DOD land (U.S. Army).	1	174.6 acres—Maintain current permit status and request transfer.	0
	2. Hawaii Air National Guard alert pad Q–D explosives source over Taxiway "T" and "V" (waiver condition).	2	Construct new HANG alert pad	195.0
	3. Hot cargo pad and transient storage igloos Q–D explosives source over taxiway "B" and inhabited area (waiver condition).	3	Taxiway "B" designated for military use only; relocate personnel and building T–3570; restrict use of 9th fairway at golf course.	192.0
COMMAND (g) SAC				
Blytheville AFB, Ark.	Q–D from explosives source over leased land. Land subject to future encroachment: (a) From alert aircraft; (b) From pad dangerous cargo (load-unload).	1	42.37 acre/fee	24.0
Ellsworth AFB, S. Dak.	Q–D from explosives source over unleased land. Land subject to encroachment: (a) From explosives storage, facility No. 7116, missile hot cargo pad.	3	Relocation of existing missile hot cargo area (pad)	5.0
Fairchild AFB, Wash.	Q–D from expolsives source over private land. Land subject to future encroachment: (a) From alert aircraft.	1	12.79 acre/perpetual easement. Note: Acquisition of easement in progress.	15.0
Francis E. Warren AFB, Wyo.	Q–D from WSA over State of Wyoming highway right-of-way	6	None required [4]	
Griffis AFB, N.Y.	Q–D from explosives source on Government-owned land over privately owned land:			
	(a) Bomber alert area—Eastern boundary within explosives clear zone between East Gate No. 3 and approach-departure zone easement line.	1	21 acres/fee	
	(b) Weapons storage area–2 locations:			
	1. North and eastern boundary inside explosives clear zone from source buildings 826, 825, and 824.	1	23 acres/fee	
	2. Northern base boundary between existing easement north of WSA and fence inside explosives clear zone from source buildings 851, 821, and 822.	1	3 acres/fee	
	(c) Cost estimates (DD form 1391) 911–146L land acquisition:			
	1. Property value (fee)			58.0
	2. Severance damages			5.0
	3. Uniform relocation assistance costs			23.0
	4. Total cost			86.0
	5. contingency			11.0
	6. Total request			97.0

See footnotes at end of table.

OFF-BASE EXPLOSIVES STORAGE QUANTITY-DISTANCE (Q-D) SAFETY CLEARANCES—Continued

Installation/location	Description	Option[1]	Corrective action	Amount (thousands)
Grissom AFB, Ind	Q–D from explosive storage source over private land which is subject to future encroachment.	1	6.72 acres/restricted easement. Note: A request for a brief real estate planning report was submitted to the U.S. Corps of Engineers on June 8, 1979.	20.0
Malmstrom AFB, Mont	Q–D from explosives source extends over privately-owned land and no restrictive easement in force to prevent future encroachment.	1	6 acre/restrictive easement	6.0
March AFB, Calif	Q–D from storage igloos over leased land. Land subject to future encroachment. Note: U.S. Senate has recently approved appropriation for this as part of fiscal year 1980 MCP.	1	492 acre/fee	700.0
	Q–D from alert aircraft over privately-owned land. Note: This is included as part of fiscal year 1979 MCP project to purchase land for AICUZ clear zone acquisition.	1	7.5 Acre/fee	30.0
Offutt AFB, Nebr	Physiological training within Q–D (violation)	6	Construct new relocated training building	378.0
Andersen, Guam	Q–D from explosive source over private land. Land subject to future encoachment from explosive storage.	3	Move explosives to other existing sites	[5]0
Whiteman AFB, Mo	Launch control facility A–1. Transporter erector—RV/GC parking area.[6]	1	Acquire 98.46 acres in perpetual easement	10.0
	Launch control facility B–1. Transporter erector—RV/GC parking area.	1	Acquire 99.01 acres in perpetual easement	100.0
	Launch control facility C–1. Transporter erector—RV/GC parking area.	1	Acquire 99.99 acres in perpetual easement	10.0
	Launch control facility D–1. Transporter erector—RV-GC parking area.	1	Acquire 99.68 acres in perpetual easement	10.0
	Launch control facility E–1. Transporter erector—RV/GC parking area.	1	Acquire 99.37 acres in perpetual easement	10.0
	Launch control facility F–1. Transporter erector—RV/GC parking area.	1	Acquire 95.50 acres in perpetual easement	10.0
	Launch control facility G–1. Transporter erector—RV/GC parking area.	1	Acquire 99.29 acres in perpetual easement	10.0
	Launch control facility H–1. Transporter erector—RV/GC parking area.	1	Acquire 101.34 acres in perpetual easement	11.0
	Launch control facility I–1. Transporter erector—RV/GC parking area.	1	Acquire 94.09 acres in perpetual easement	95.0

	Launch control facility J-1. Transporter erector—RV/GC parking area.	1	Acquire 99.65 acres in perpetual easement	10.0
	Launch control facility K-1. Transporter erector—RV/GC parking area.	1	Acquire 99.65 acres in perpetual easement	10.0
	Launch control facility L-1. Transporter erector—RV/GC parking area.	1	Acquire 93.21 acres in perpetual easement	9.0
	Launch control facility M-1. Transporter erector—RV/GC parking area.	1	Acquire 92.25 acres in perpetual easement	9.0
	Launch control facility N-1. Transporter erector—RV/GC parking area.	1	Acquire 99.71 acres in perpetual easement	10
COMMAND (h) TAC				
Homestead AFB, Fla	Q-D from explosive source over waived land. Land subject to encroachment. (a) From alert shelters.	1	0.65 acre fee	15.0
Bergstrom AFB, Tex	Q-D from explosive sources over waived land. Land subject to encroachment. (a) From munitions storage igloos (design capacity).	6	222 acre/base is currently preparing request to reduce munitions capacity such that Q-D area would fall within existing easement area.	NA
	Q-D from explosive sources over waived land. Land currently commercially developed. (a) From combat loaded aircraft and fire power demonstrations.	6	33 acre (10.6 acres owned by Texas Highway Department). Explosive loaded aircraft park at the air base for a 24-hr period an average of 4 times per year. Fire power demonstrations are conducted an average of once per 18 mo. The wing commander proposes allowing the current temporary waiver to expire in May 1980, after which he will declare a temporary 72-hr waiver for the Q-D area as needed. If this proposal is not acceptable, acquiring these 33 acres of land in fee simple will require about $50,000 per acre.	1,650.0

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[1] For the 50 States, U.S. territories and possessions:

OPTIONS

1. Purchase of sufficient land to provide necessary clearances.
2. Construction of new storage magazines to reduce concentrations of explosives.
3. Relocation of explosives to other existing sites or to new sites (including relocation of aircraft if necessary).
4. Construction of complete new storage sites if necessary.
5. Revision of handling procedures or operational procedures.
6. Other options as necessary.

[2] No dollar outlays. Land use permit transfer only.

[3] Reestablish the alert hanger. Cost: In excess of $5,000,000.

[4] Subject area was at 1 time part of the base that was declared excess and subsequently conveyed to the State for highway purposes. The restrictive easement estate for explosive clear zones is subject to existing easements of public roads, highways, etc. Although the State holds a fee interest in the right of way, a reverter clause provides that the property must be used only for highway purposes.

[5] Training exercise.

[6] Storage of TE and RV/GC units that are required to remain overnight or to park for a short time. Quantity distance area begins at point where explosive would be stored.

NONAPPROPRIATED FUND CONSTRUCTION

Senator **Hart**. Please insert in the record at this point your response to the issue of non-appropriated fund construction as reflected in your letter of February 16, 1980.

Answer. A copy of the letter to Chairman Stennis, dated February 16, 1980, is attached for insertion in the record.

Assistant Secretary of Defense,
Washington, D.C., February 16, 1980.

Hon. John C. Stennis,
Chairman, Committee on Armed Services,
U.S. Senate, Washington, D.C.

Dear Mr. Chairman: In the Conference Report on the Department of Defense Authorization Bill for Fiscal Year 1980 (House Report #96-595), the conferees noted the "disparity between Services with regard to the use of nonappropriated funds" for the construction of certain community-type facilities. As a result of this finding, the conferees directed the Department of Defense to establish a "consistent programming policy for this class of facilities in their Fiscal Year 1981 budget request." The purpose of this letter is to submit such a policy statement for the consideration of your Committee. For your information, this same letter is also being sent to the Chairmen of the Senate Appropriations Committee, House Appropriations Committee, and House Armed Services Committee.

The Department of Defense has long had a general policy that the provision of community facilities in DoD Construction Categories 740 and 750—Morale, Welfare and Recreational (MWR), Interior and Exterior, is a basic responsibility of the Federal Government and that their construction should therefore be funded with appropriated funds. Due to the reality of restrictive military construction programs in past years, each of the Services has built a number of these facilities with nonappropriated funds (NAF), even though many of the projects would otherwise have qualified for appropriated funding. Unfortunately, inconsistent application of supplemental nonappropriated funding among the Services has resulted in the de facto disparity noted by the conferees.

Precedence over the past years has dictated that several types of facilities be built primarily with nonappropriated funds—for example, commissaries (built from surcharge monies), exchanges and bowling alleys. None have been built exclusively with NAF however. The Congress has funded a number of these facilities at new military installations or in combat zones; as integral parts of barracks/housing complexes, air terminals, hospitals, and similar projects; to replace facilities destroyed by Acts of God, fire or terrorism; to correct life safety deficiencies; or to provide essential recreation activities at remote or isolated sites. We would expect these types of projects to be consistent with the guidance in the Conference Report for continued funding with appropriated funds.

Consistent with the guidance in the Conference Report (please see extract at Enclosure (1), the Department of Defense developed a listing of facilities at Enclosure 2 which would be funded with appropriated military construction funds or nonappropriated funds, as indicated thereon. The enclosure is not applicable to repair, maintenance, and minor construction projects funded from operations and maintenance or other appropriations. Distinction has been made in some cases for construction of community facilities in areas outside the United States. This distinction is based upon the nonpermanence of deployment of U.S. forces in foreign areas, to support a military mission directly, as opposed to forces garrisoned within the United States. Please note, too, that while some community facilities charge a patron fee to cover a portion of the operational expenses, we do not regard all such activities as being revenue producing. This is especially true of child care centers, which are vital military community facilities in today's environment. The advent of increasing numbers of women in the military, working spouses, single parents, and joint military parents (both in Service) mandates the provision of adequate and safe child care on military installations. While these centers generate income from patron fees to offset operational costs, there is no objective, nor should there be, to produce net revenues or capital improvement funds from these activities.

If the attached funding policy at Enclosure 2 is acceptable to your Committee, this Department intends to apply the policy consistently with as few deviations as possible. The Fiscal Year 1981 military construction program has been revised accordingly. Some projects authorized for appropriated funding will, however, be built with nonappropriated funds if they were so designated prior to the promulgation of current policy and are in the design stage or beyond. We expect that it will take a year or two to complete these projects.

Should your Committee have any comments on the policy at Enclosure 2, we would appreciate receipt of same as soon as possible so that we might make any necessary adjustments to our current and future year military construction programs. Thank you for your consideration.

ROBERT B. PIRIE, Jr.,
Assistant Secretary of Defense (M.R.A. & L.).

Enclosures,

EXTRACT OF HOUSE REPORT NO. 96-595 CONFERENCE REPORT ON THE DOD MILITARY CONSTRUCTION AUTHORIZATION BILL, FISCAL YEAR 1980

The conferees noted the disparity between Services with regard to the use of nonappropriated funds for the construction of certain facilities. Some facilities such as, commissaries, exchanges, and bowling alleys are now built exclusively with nonappropriated funds. Other facilities such as child care centers, gymnasiums, and auto hobby shops are built with both appropriated and nonappropriated funds with each Service determining its own programming approach. The conferees believe that the Department of Defense must resolve this inconsistent programming policy.

In general the conferees feel that those facilities (1) which do not directly support a military mission or provide a required amenity for the service person and/or (2) which are revenue-producing facilities, should not be constructed with taxpayers' money. This is a matter of simple priority. As the construction backlog grows in real terms, the available construction dollars must go to support the direct military requirements.

The conferees will expect the Defense Department to have established a consistent programming policy for this class of facilities in their fiscal year 1981 budget request and such policy will be examined during hearings on next year's bill.

DEPARTMENT OF DEFENSE FUNDING POLICY—CONSTRUCTION OF COMMUNITY FACILITIES

Type of facility	Fund source	
	Milcon Appropriated [1]	Nonappropriated
Gymnasium/Field House/physical activities complex	X	
Recreation center/day room/multipurpose recreational facility	X	
Multipurpose auditorium/theater	X	
MWR administrative office/supply center	X	
Family assistance/service center	X	
Child care center	X	
Swimming pool	X	
Library	X	
Open mess (club)	(2)	X
Exchange resale facility	(3)	X
Exchange logistical facility	(4)	X
Arts and crafts/automotive self-help garage/skill development center	(5)	X
Bank	(6)	X [7]
Credit union		X [7]
Thrift shop		X [7]
Commissary facilities		X [8]
Book store		X
Package beverage store		X
Rod and gun club		X
Aero club		X
Temporary lodging facility/guest house		X
Cabins/cottage/recreation site lodge		X
Outdoor recreation pavilion/facility		X
Bowling center		X
Skating rink (ice or roller)		X
Youth center		X
Playing courts/fields	(9)	X
Golf course/facility		X
Riding stable		X
Camp ground		X
Amateur radio facility		X
Bathhouse		X
Marina/boathouse		X
Outdoor theater		X
Bandstand		X

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[1] Appropriated funds may be used for all community facility construction related to the establishment, activation or expansion of a military installation; relocation of facilities for the convenience of the Government; replacement of facilities denied by country-to-country agreements; restoration of facilities destroyed by the acts of God, fire, or terrorism; and to correct life safety deficiencies.

[2] Consolidate open mess facilities (including modular construction) outside the United States.

[3] Exchange facilities required in areas of military conflict; or as integral parts of air terminal, hospital, housing or other construction projects.

[4] Exchange administrative/storage/maintenance facilities outside the United States and all laundries, dry cleaning plants, bakeries, dairies or similar facilities operated by an exchange in support of a military mission.

[5] Arts and crafts/automotive self-help garages/skill development centers outside the United States.

[6] Banks at locations where onbase banking services are required, but where the patronage base is insufficient to provide these services on a self-sustaining basis.

[7] Private funds.

[8] Surcharge trust funds.

[9] Playing courts/fields constructed as a part of a gymnasium/field house/physical activities complex.

Senator **Hart**. Why should appropriated funds be used for all community facilities in accordance with note 1, page 2?

Answer. This is generally consistent with precedence, as well as a matter of equity. We believe that appropriated funds should be used to provide community facilities at new military installations, in combat zones, or where the convenience of the Government is involved. Nonappropriated funds, generated by Armed Forces personnel, should not have to be spent for this type of capital expenditure.

Senator **Hart**. Several types of facilities propose to use appropriated funds outside the United States and non-appropriated funds inside the United States. Justify the difference.

Answer. This distinction is based upon the nonpermanence of deployment of U.S. forces in foreign areas, to directly support a military mission, as opposed to forces garrisoned within the United States. This distinction is considered to be consistent with guidance in the Conference Report on DoD Military Construction (H.R. 96–595).

Senator **Hart**. Some of the Services (e.g., the Air Force in the case of child care center) have an aggressive program to construct facilities with non-appropriated funds that your new policy now requires be built with appropriated funds. Will the Services be prohibited from building facilities with non-appropriated funds if the policy is to build them with appropriated funds?

Answer. Yes. We will permit as few deviations as possible from our policy.

Senator **Hart.** Justify the building of theaters, swimming pools, child care centers, and libraries with appropriated funds.

Answer. Construction of new theaters will be for multipurpose use. These facilities are used for troop information and education purposes and are frequently the only suitable sites for large assemblages of this type. Swimming pools are one of the most popular physical fitness facilities. They may be used for training and therapy and for dependent activities. These facilities are frequently provided by counties or municipalities in the civilian sector. Child are centers have become vital military community facilities in today's environment. The advent of increasing numbers of women in the military, working spouses, single parents, and joint military parents (both in Service) mandates the provision of adequate and safe child care on military installations. Libraries are vital to the support of educational programs. They are essential community facilities, and are recognized as such in both military and civilian communities.

Senator **Hart.** For each facility type that you plan to build with appropriated funds indicate the construction backlog by Service (number of projects and dollar value) and indicate what portion of the facilities operating costs will be offset by revenues derived from participant fees.

Answer. These data will have to be secured from the individual Military Services, and will be submitted to you later.

Senator **Hart.** When will your proposed funding policy go into effect?

Answer. Effective with the Fiscal Year 1981 military construction program.

SCHOOLS

Question. Why did the Department of Education not budget for the schools that you have proposed in the FY-81 budget?

Answer. The Department of Education Organization Act, Public Law 96-88, which was signed by the President on October 17, 1979, requires the transfer of DODDS from DoD to the new Department of Education within three years. To facilitate the orderly transition process, a task force is currently designing an implementation plan for the establishment of an Office of Education for Overseas Dependents in the Department of Education and for the transfer to it of those functions now vested in the Department of Defense. A complete transition plan is expected to be submitted to the Congress in October 1980. Subject to approval of the plan by the Congress, the phase-in of the DOD Overseas Dependents Schools is tentatively scheduled to be completed by October 1, 1981. It is requested that no action be taken to prevent, delay, or jeopardize the programming, design and construction of DOD dependent school projects, overseas during the transition period. Public Law 96-88 also directs the Department of Defense to continue to provide the same type and level of administrative and logistical support that was provided to the DODDS schools prior to the operation of the Department of Education. The Education Department is presently not funding any costs for DOD schools. Programming and budgeting of all costs, including construction for DOD schools, will be assumed by the Education Department commencing with the fiscal year 1982 program.

Question. Has the Department of Education validated the requirement for schools that you have requested for fiscal year 1981?

Answer. Yes sir. The requirement for schools in this program has been validated by the Secretary of Education and the Secretary of Defense. Attached is a copy of a letter recently sent to the Chairman of the House Subcommittee on Military Installations and Facilities.

The Secretary of Defense,
Washington, D.C., March 7, 1980.

Hon. Lucien N. Nedzi,
Chairman, Subcommittee on Military Installations and Facilities,
Committee on Armed Services,
House of Representatives, Washington, D.C.

Dear Mr. Chairman: The overseas dependents schools are scheduled to remain under the Department of Defense at least through September 30, 1981. The Department of Defense and Department of Education deem it essential that the school system receive adequate funding, before, during, and after its transfer, for all of its programs, particularly the construction program.

The Department of Education transition staff has examined the fiscal year 1981 program for school construction and has determined that it is consistent with plans for assuming responsibility for operating the school system and the goal of providing quality education for Department of Defense dependents.

For the past few years the Department of Defense has made a determined effort to upgrade the deplorable conditions found in many school facilities. Obviously, these deficiencies cannot be corrected in one year, but to delay or defer any actions that have been initiated would only exacerbate an already bad situation. Therefore, we request your full support of the Department of Defense fiscal year 1981 request for school construction funds.

Sincerely,

SHIRLEY M. HUFSTEDLER,
Secretary of Education.
HAROLD BROWN,
Secretary of Defense.

REAL PROPERTY MAINTENANCE COSTS

Question. The GAO in a report dated January 9, 1980, alleges widespread errors in payments to contractors for repair and maintenance contracts. Overpayments to the contractor are common and in some cases contractors are paid for work that was never done. Insert the digest from that GAO report in the record at this point. Since DOD did not officially comment on that report, please comment for the record.

Answer. Digest of 9 January 1980 GAO report is attached. The official DOD response of 17 March 1980 commented on the 9 January 1980 GAO report and is attached.

COMPTROLLER GENERAL'S REPORT TO THE CONGRESS

BETTER MANAGEMENT NEEDED IN DOD TO PREVENT FRAUDULENT AND ERRONEOUS CONTRACT PAYMENTS AND TO REDUCE REAL PROPERTY MAINTENANCE COSTS

Digest

The Department of Defense (DOD) says it is providing the maximum maintenance, repair, and minor construction of its real property possible with the resources available; about half the work is accomplished through contracts. Meanwhile, valid maintenance requirements have been identified faster than funds become available. As a result, the backlog of work not done was due to a lack of resources—$2.3 *billion* at the end of fiscal year 1978 and estimated to increase another $151 million by the end of fiscal year 1980.

Findings and conclusions

At 10 Army, Navy, and Air Force installations, GAO found that some contractors had been substantially overpaid. (See ch. 2.) Because the installations' inspection and payment verification procedures were inadequate, they paid for work not done, for inferior quality work, and for the same work more than once. For example:

Fort Sam Houston paid a contractor for painting 343,900 square feet of surface area on 42 buildings; the buildings measured 193,270 square feet, a 78-percent overpayment.

Fort Knox paid a contractor $419 for painting a small building that had not been painted.

The Navy paid two different contractors for painting the same houses in the Sewells Point Area at about the same time. Available records do not show whether the houses were painted twice.

Fort Hood paid a contractor for painting occupied quarters even though he actually painted unoccupied ones and should have charged about 25 percent less.

Effective inspection procedures and internal controls could have prevented or provided early detection of these overpayments. For most contracts reviewed, Government inspectors were responsible for verifying the quality and quantity of completed work. Their reports provided the basis for approval of the contractors' payment requests. However, the reports were often unreliable because they contained erroneous or incomplete information. Detailed records of work measurements and computations supporting the reports were often not maintained.

GAO concluded that frequent independent tests are needed to certify the quality of each inspector's work. In addition to reducing the potential for collusion between Government and contractor personnel, independent tests could detect other problems faced by inspectors, such as excessive workload, lack of training, misunderstanding as to their responsibility and authority, and insufficient familiarity with contract provisions.

Most overpayments occurred on "unit price" contracts. Payments were computed by multiplying a unit price by the quantity of work performed, expressed in such terms as square feet, square yards, board feet, or service calls. Since these contracts often require physically measuring the quantity of work done, they are more difficult to administer and more susceptible to intentional or unintentional overcharges than lump-sum contracts which provide fixed prices for specific jobs.

GAO found fewer and less significant overpayments at the Air Force installations where lump-sum contracts reduced the potential for abuses. Some overcharges occurred and GAO concluded that payment verification procedures should be strengthened to provide better control.

Military installations could further reduce maintenance and repair costs by improving their contracting methods and procedures. (See ch. 3.)

Opportunities for reducing costs were particularly apparent where installations used requirements contracts to obtain maintenance services. Requirements contracts are awarded to contractors who bid the lowest total price on the Government's *estimated* requirements.

Since the work actually ordered often differs from the original estimated requirements, these contracts are susceptible to a competitive strategy known as unbalanced bidding. (See p. 17.) By bidding low on work they expect not to be ordered and very high on work expected to be ordered, contractors obtain the contracts and receive higher payments than unsuccessful bidders would have received for the same work.

On six Army contracts, prices offered by unsuccessful bidders would have reduced costs by about $707,000, or 16 percent of total costs. Unbalanced bidding can be eliminated by developing accurate requirements estimates or by using different contracting methods or bid evaluation procedures.

Recommendations

The Secretary of Defense should see that the Secretaries of the Army, Navy, and Air Force strengthen controls over the procurement of maintenance and repair services. (See pp. 30 and 31.) The services should consider deficiencies identified in this report and in ongoing internal audits. (See pp. 28 and 29.) Action should also be taken to collect past overcharges identified in this review and in the Defense audits.

Information developed on contracts at three different installations has been referred to the Department of Justice for investigation of possible Federal criminal law violations.

The specific cases referred are not identified in this report to avoid jeopardizing these investigations. All contractor names and contract numbers have been omitted.

DoD Comments

DoD comments were not received in time to be included in this report.

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE,
Washington, D.C., March 17, 1980.

Hon. ELMER B. STAATS,
Comptroller General of the United States, General Accounting Office, Washington, D.C.

DEAR MR. STAATS: This is in response to your letter of January 9, 1980, to the Secretary of Defense which forwarded copies of your final report entitled "Better Management Needed in DOD to Prevent Fraudulent and Erroneous Contract Payments and to Reduce Real Property Maintenance Costs," PSAD-80-14 (OSD Case #5294).

Regrettably, the DOD response to the draft of this report, whereby DOD commented on the numerous positive actions already taken to correct situations cited in the report, was not received in time to be included in the final report. Without taking a disputative or challenging position on each finding, we made a balanced, constructive reply to the draft and generally concurred with the findings and recommendations of the report. DOD acknowledges a need to strengthen controls over the procurement of maintenance and repair services and has advised the military Services to restress procedures to preclude these problems in the future. However, DOD is concerned that the title and tone of the report can be construed to infer that this Department is poorly administering contracts, wasting hundreds of thousands of limited O & M dollars, and portrays a Departmental contract environment that is not justified on the basis of fact.

Detailed investigations conducted in the Norfolk area determined that the GAO auditors had extrapolated from a very small sample of atypical, unit-price, housing-painting contracts to suggest overpayments much larger than actually occurred. Although a Grand Jury is investigating some of the allegations mentioned in the report, DOD has found no evidence of fraud or criminal acts on the part of Government personnel and believes that the contractual procurement problems in this Department are not as extensive as to be compared validly to those reportedly found in the General Services Administration.

We again express our appreciation for this report. The information presented therein will assist us in our overall management improvement efforts to provide a more cost effective DOD real property maintenance program.

Sincerely,

RICHARD DANZIG,
Principal Deputy Assistant,
Secretary of Defense (MRA & L).

Question. In your view, is the repair and maintenance contracting situation as bad as the picture painted by GAO in their report?

Answer. No. DOD agreed that we have problems in the effective procurement of maintenance and repair services and generally concurred with the findings and recommendations of the report. However, we are concerned that the title and tone of the report can be construed to infer that DOD is poorly administering all contracts, wasting hundreds of thousands of limited O & M dollars, and portrays a Departmental contract environment that is not justified on the basis of fact. Maintenance service contracts present some unique contract circumstances including type of work, type of contractors, special administrative consultants, and inspection requirements. Recognizing the increased emphasis on contracting out more of these maintenance service functions, the Services have taken aggressive actions to strengthen controls and contract procedures in the procurement of maintenance and repair services. Some of these actions were underway prior to the GAO review. They include development of new training courses for inspectors, strengthening field contract-administration staffing, developing better contract specifications, issuing new instructions requiring increased attention to service contracting, limiting the use of unit-price contracts, continuing internal-audit reviews and, in general, stressing the need to improve the procurement of maintenance and repair services. Overall, DOD is doing a good job of contracting and these actions are steadily improving the situation. We do not believe that the contractual procurement problems in DOD are as extensive as, nor should be compared validly to, those reportedly found in the GSA.

Question. Have you conducted any independent audits of similar work which can be compared against GAO findings?

Answer. Maintenance service contracting has been made an item of special interest for internal audit by the Services, and audits have been made in this area. These audits have found many of the same type of problems noted in the GAO report and are generally attributed to a shortage of qualified personnel and inadequate implementation of prescribed policy and criteria at the operating level. Where overpayments were found, recoupment actions were initiated. Other corrective and strengthening actions noted in earlier testimony have also been taken. The audits, however, have not found the overpayment problem to the extent noted in the GAO report.

DoD will continue to stress improved contract administration procedures and conduct internal audits to ensure compliance.

DEFENSE AGENCIES—PROJECTS

Question. Is every project in Title IV under design? Are there any projects that cannot be put under contract in fiscal year 1981?

Answer. There is one project, the Hydrographic/Topographic Center Facility Modification project which has not yet begun.

A predesign conference is scheduled for March 31, 1980, which will mark the beginning of design. There is one project which will not be placed under construction in fiscal year 1981. That project is the Defense Technical Information Center ADP Facilities Alteration project. Recently encountered delays in the procurement of the ADP equipment, which effects the final design of the project, has, in turn, delayed construction award to beyond fiscal year 1981.

Question. What rate of inflation have you used for projects in Title IV and how have you accounted for inflation in your estimates?

Answer. The percent of inflation used for projects in Title IV is the same as that used by the Services, that is 9 percent/year for CONUS projects and the prevailing inflation rate in the area for projects overseas. Generally speaking, this is accounted for in construction cost estimates based upon current prices for labor and materials which are then escalated to the midpoint of construction based upon the prevailing inflation rate. This has proved to be an acceptable method for projecting costs unless some unusual features dictate less than uniform construction execution.

Question. Provide a list of projects in Title IV that were previously requested and failed authorization. State the reason the project was not authorized.

Answer. The Defense Intelligence Analysis Center has been previously requested but not authorized. In fiscal year 1976 the Senate Armed Services Committee deferred the projects for four stated reasons.

The reasons given for deferral and how they have been resolved are discussed below:

1(a) Reason: Select Committees examining the Intelligence Community may develop recommendations that might affect the new facility requirement.

(b) Discussion: The results of the inquiry strengthening the role of DIA and the requirement for a new facility.

2(a) Reason: Deferral will permit a more comprehensive design and cost estimate.

(b) Discussion: The design of the new facility is 100 percent complete, confirming a requirement for 845,920 square feet at an estimated cost of $106.2 million.

3(a) Reason: The committee suspects that a new environmental impact statement will be required.

(b) Discussion: The environmental impact statement for the Defense Office Complex at Bolling, which was filed with the Council on Environmental Quality in 1973, has been reappraised. A new environmental assessment was prepared and filed with the National Capital Planning Commission in May 1977. The assessment determined that construction of the new DIA facility at the Bolling site would not adversely affect the environment.

4(a) Reason: Deferral will give DoD time to restudy the alternatives of using existing facilities in the Washington area: The Pentagon and Fort Belvoir were given as examples.

(b) Discussion: Alternatives to new construction have been examined. The results show that there are no unoccupied Government buildings, military or GSA, available or expected to become available in the National Capital Region. Displacement of another agency to accommodate DIA in a building in the National Capital Region is expected to require an investment of $136 million to refit a structure, such as the Pentagon, for DIA and erection of a new facility for displaced personnel. Three or more additional years of planning would be needed with attendant cost increases. Surveys also show that no privately owned space is apt to become available that would house more than 100 employees. Further, Congress and the OMB have placed severe constraints on GSA authority to acquire privately owned buildings for leasing.

In fiscal year 1979 the House Armed Services Committee deferred without prejudice the Static War Headquarters building pending solution of problems relating to siting and the completion of necessary planning to adequately identify all costs associated with the project.

Question. Provide a list of projects in Title IV that were previously authorized but for some reason were never built (e.g., authorization expired, funds not appropriated, etc.). State the reason the project was not built.

Answer. The following projects were previously authorized but were not constructed because funds were not appropriated:

1. Bad Hersfeld, Germany, Elementary School Addition.
2. Ludwigsburg, Germany, Elementary School Addition.
3. Baumholder, Wetzel Housing Area, Germany, High School Addition.

4. Pruem Air Station, Germany, Elementary School Addition.

5. Defense Technical Information Center, Cameron Station, Virginia, ADP Facilities Alteration.

Question. Are any projects in Title IV affected by or contingent on pending realignment actions? (Please list.)

Answer. There are no projects in the fiscal year 1981 Title IV request that are affected by or contingent upon pending realignment actions.

Question How many projects in Title IV will have some form of solar energy?

Answer. There is one project included in the Title IV request for defense agencies that includes solar energy features. The Elementary and High School addition at the Naval Air Station, Bermuda, contains solar hot water heating for the gymnasium.

SPECIFIC PROJECTS

(DEFENSE INTELLIGENCE ANALYSIS CENTER, BOLLING ANACOSTIA, DISTRICT OF COLUMBIA)

Question. This project was requested previously in the fiscal year 1976 budget request. It was deferred at that time by the Senate Armed Services Committee for four reasons. Discuss these reasons and how they have been resolved in your current request.

Answer. The authorization request for $86 million was deferred without prejudice. The Committee recognized the unsatisfactory conditions at Arlington Hall Station and the requirement for permanent quarters. The reasons given for deferral and how they have been resolved are discussed below:

1(a) Reason: Select Committee examining the Intelligence Community may develop recommendations that might affect the new facility requirement.

(b) Discussion: The results of the inquiry strengthened the role of DIA and the requirement for a new facility.

2(a) Reason: Deferral will permit a more comprehensive design and cost estimate.

(b) Discussion: The design of the new facility is 100 percent complete, confirming a requirement for 845,920 square feet at an estimated cost of $106.2 million.

3(a) Reason: The committee suspects that a new environmental impact statement will be required.

(b) Discussion: The environmental impact statement for the Defense Office Complex at Bolling, which was filed with the Council on environmental quality in 1973, has been reappraised. A new environmental assessment was prepared and filed with the National Capital Planning Commission in May 1977. The assessment determined that construction of the new DIA facility at the Bolling site would not adversely affect the environment.

4(a) Reason: Deferral will give DOD time to restudy the alternatives of using existing facilities in the Washington area: The Pentagon and Fort Belvoir were given as examples.

(b) Discussion: Alternatives to new construction have been examined. The results show that there are no unoccupied Government buildings, military or GSA, available or expected to become available in the National Capital Region. Displacement of another agency to accommodate DIA in a building in the National Capital Region is expected to require an investment of $136 million dollars to refit a structure, such as the Pentagon, for DIA and erection of a new facility for displaced personnel. Three or more additional years of planning would be needed with attendant cost increases. Surveys also show that no privately owned space is apt to become available that would house more than 100 employees. Further, Congress and OMB have placed severe constraints on GSA authority to acquire privately owned buildings for leasing.

Question. Why have you delayed five years in seeking authority for this facility?

Answer. After Select Committee inquiries of the intelligence community were finished, funding constraints placed on DoD programs deferred the project to fiscal year 1981.

Question. The Army has stated its intention in the past to move the Engineer school from Fort Belvoir to Fort Leonard Wood. Why not backfill Fort Belvoir with DIA elements and reduce the requirement for this facility?

Answer. The concept of relocating DIA operations to Fort Belvoir has been examined and found infeasible. There is no single building or group or buildings of sufficient size that could be joined and refitted to meet DIA's needs. The cost of adapting and augmenting existing facilities would be prohibitive and is expected to exceed the cost of the proposed Defense Intelligence Analysis Center at Bolling Air Force Base. To perform DIA operations between the scattered buildings in the open campus type environment of Fort Belvoir would present an unacceptable security risk. The unique types of space required for certain operations are not available.

Further, there is no plan to move the Engineer Center from Fort Belvoir. If a move were initiated it is estimated that from five to seven years of planning and construction would be required to complete it.

The need to consolidate DIA operations in a single facility is time sensitive and must be met beginning in 1983. Construction must begin in fiscal year 1981 to meet the time constraints. The imminent loss of leased space housing sophisticated photographic processing activities threatens continuity of operations. Housing half the work force and much vital equipment in unsafe and rapidly deteriorating temporary building presents a constant risk of disruptive intelligence failures during any crisis situation. Housing personnel in six scattered facilities hinders operations, particularly during crisis situations.

Question. Bolling/Anacostia is not served conveniently by mass transit. How will you accommodate the traffic congestion?

Answer. Traffic circulation to and from Bolling has been coordinated with the Washington Area Metropolitian Transit Authorities. It is planned that mass transit service from the Anacostia Station, proposed for completion in 1983, will be performed by buses to the DIA site and other locations at the Bolling/Anacostia complex.

Question. Is this the total requirement to get the new facility or will there be other funds required (e.g., access road funds for ramps to I–295, etc.)?

Answer. All costs to acquire the new facility are included in the Authorization Request of $106.2 million. The Air Force has programmed $7.1 million for upgrading gates and interior roads in fiscal year 1982 to support operations at Bolling that are not solely for DIA.

Question. During consideration of the Building in the fiscal year 1976 request, DIA offered a $15 million reduction from the $86 million request. Is any reduction possible from this request?

Answer. The Authorization Request for $106.2 million is the minimum requirement to accommodate DIA operations. Continuing DoD reviews of the design development confirm that the scope of work is indeed austere and no reductions are possible.

Question. How many people would use this facility?

Answer. The facility will house 2,739 personnel.

*Question.*Why is a new EIS not required? Who certified that this project will not have a significant impact on the environment in the latest environmental assessment?

Answer. A new environmental impact statement is not required because the environmental assessment accomplished in 1977 found construction of the new DIA facility would not impact adversely on the environment. The assessment was accomplished by the Naval Facility Engineering Command on behalf of DoD.

Question. How much is the current Arlington Hall real estate worth? Is anyone interested in buying it? Could an exchange be worked out where the purchaser would pay for the cost of a facility?

Answer. Professional appraisers estimated that the 87 acres of land at Arlington Hall Station could command $18.9 million on the open market. Interested buyers could probably be found. DoD has no authority to arrange an exchange of the property for a new facility. Arlington Hall Station will be retained by DoD until DIA and the Army Intelligence and Security Command are relocated. The facilities would then be screened for other possible Defense needs. If there are none, the property would be referred to the General Services Administration for disposition.

(EXPAND ADP FACILITIES, DEFENSE TECHNICAL INFORMATION CENTER, CAMERON STATION, ALEXANDRIA, VIRGINIA)

Question. Why is the design completion date for the ADP alteration for DTIC so late?

Answer. The design completion date for the ADP facility alterations is based upon the estimated contract award date of 3rd Quarter fiscal year 1981 for ADP equipment. Installation is projected for 1st Quarter fiscal year 1983.

Question. What is the cost of installed equipment for the ADP facility at DTIC and when is it budgeted?

Answer. The estimated purchase price of the replacement ADPE is $6.5 million. Funds have been budgeted for purchase of the equipment in fiscal year 1984, but funds for leasing the new equipment for a one year period preceding purchase are budgeted for fiscal year 1983.

MODIFY HTC FACILITIES TO SUPPORT RAPID DEPLOYMENT FORCE, DMA HYDROGRAPHIC/TOPOGRAPHIC CENTER, BROOKMONT, MARYLAND

Question. The requirement for this project is not clear. Why can't the requirement for maps and charts to support the Rapid Deployment Force be supplied with existing production capability?

Answer. The Defense Mapping Agency cannot meet the Rapid Deployment Force requirements within existing production capability without impacting the fiscal year 1981–1986 minimum essential Air Launch Cruise Missile requirements. The critical element in both Cruise Missile and Rapid Deployment Force support is photogrammetric production.

Approximately 600 of the maps and charts to support Rapid Deployment Force require photogrammetric compilation. The fiscal year 1981 Budget includes an additional $5 million to procure photogrammetric instrumentation required to support Rapid Deployment Force. Without the new equipment, it would be necessary to draw down from Cruise Missile production to meet Rapid Deployment Force needs. The requested military construction is essential for installation of the new equipment.

This is the last of the related inexpensive space conversions that can be made at the Brookmont Center. If in the future we are to significantly increase our production capability in the Brookmont plant, it will be necessary to undertake a major construction project.

Question. Are you operating current production facilities around the clock?

Answer. The photogrammetric equipments to exploit highly classified source materials are operating on three-shifts and six plus days per week to provide data for the Cruise Missile. The Rapid Deployment Force also needs maps made from these equipments. The additional equipments and facility will give us this needed capability.

OPERATION BUILDING NO. 3 ADDITION, FORT GEORGE G. MEADE, MARYLAND

Question. Will this project permit you to get out of leased space at Friendship?

Answer. No. The Operations Building 3 addition is to accommodate new and expanded [deleted] initiatives at Fort Meade. There are no [deleted] activities in the leased space at Friendship.

Question. What is the status of those leases and what are your plans to vacate them?

Answer. The Agency has included in its construction program four projects at Fort Meade that affect the leased facilities.

1. Operations Building 2 project proposed for the fiscal year 1982 program will, if approved and funded, provide space to relocate some of the operational and support elements from the leased buildings.

2. Operations Building 4 project proposed in the fiscal year 1985 program will, if approved and funded, provide for the relocations of the remaining operational and support elements.

3. The lease on the two story (FANX II) building will expire in fiscal year 1989. We are planning construction to house the [deleted] which is the primary occupant of FANX II. Authorization and funding will be requested in the fiscal year 1986 program so that the replacement building can be occupied to coincide with the lease termination date.

4. The principal occupant of the seven story (FANX III) building is [deleted]. In 1985 two five year options will remain on the property. The current plan is to exercise one five year option and to replace the lease structure through construction of an [deleted] facility at NSA Fort Meade. Authorization and funding would be required in fiscal year 1987 to allow [deleted] to vacate FANX III upon expiration of this option which occurs in fiscal year 1990.

OPERATIONS BUILDING, CLASSIFIED ACTIVITY, FORT BELVOIR, VIRGINIA

Question. The estimate on this project is not very useful. I don't see how "84,000 Lump Sums" can cost $14,960,000. Provide a more useful cost estimate.

Answer. The data provided were erroneously listed as "lump sum" in lieu of "square feet." The estimate remains as a single item since the support facilities are special features of the basic structure. These features as discussed in the description of construction affect the foundations, walls, structure and mechanical/electrical systems of the facility. All of these items are normally accounted for in basic square foot costs of programmed facilities.

DEPARTMENT OF DEFENSE DEPENDENTS SCHOOLS—OUTSIDE U.S.

Question. Are the schools programmed for Germany compatible with the [deleted]?

Answer. DODDS personnel are aware of the [deleted]. All school projects in this request are valid and consistent with this [deleted].

Question. Why is SIOH 6.5 percent on the school projects?

Answer. The Corps of Engineers, as the Construction Agent for DODDS, advised on September 17, 1979, that the supervision, inspection and overhead rate for overseas projects was being changed to 6.5 percent, effective October 1, 1979. The corps advised the change was due to increased costs being experienced for overseas personnel moves because of limited tours, dollar fluctuations, effects of local national salary increases, international agreements, and other increased operating expenses overseas.

Question. The 1980 Means Cost Data estimating book lists median school costs at about $37/sf as of January 1, 1980 for an area with a cost index of 1.0. Your gross cost/sf ranges from $63 to $189/sf. This seems badly out of line. Justify your high costs.

Answer. The estimates were orginally prepared and were subsequently, rechecked by the Military Department's Construction Agents, the U.S. Army's Corps of Engineers and the U.S. Navy's Naval Facilities Engineering Command. These Construction agents are responsible for the design and construction of school construction projects for DoDDS. These Construction Agents consider the estimates to be accurate and reasonable for the construction of adequate functional school construction projects overseas. The range and the level of costs are considered to be realistic when a large number of factors are taken into consideration. The projects are located in five different countries, range from additions to existing schools to complete new schools, vary greatly in size, and reflect local variations in the types of construction materials used at each location. The estimates were based on data obtained from recent bid openings and on estimates of the architect-engineers preparing the designs for the schools. The estimates also incorporate the overseas area cost index differentials, expected cost growth factors, and the foreign currency fluctuations.

Question. For all school projects, provide the school population figures for the last five years and the forecast population for the next two years.

Answer. School population figures for the last five years and forecasted figures for the next two years at the indicated installations are as follows:

Installation	1975	1976	1977	1978	1979	1980	1981	1982
Wiesbaden	1,913	1,919	1,927	2,083	2,090	2,171	2,260	2,300
Iwakuni	388	394	389	393	391	396	400	400
Sagamihara	523	518	527	532	520	572	595	600
Seoul	772	778	765	768	783	797	800	800
Osan	0	0	0	0	23	200	250	250
Taegu	441	444	467	441	446	550	585	600
Aschaffenburg	770	772	882	842	843	885	922	950
Yokota	1,604	1,609	1,612	1,610	1,619	1,690	1,710	1,726
Clark	976	969	972	979	975	1,005	1,016	1,025
Bad Hersfeld	194	196	192	197	197	212	237	250
Ludwigsburg	968	972	970	974	1,172	1,124	1,100	1,000
Bermuda	467	479	455	474	516	518	520	520
Baumholder	681	684	677	696	756	749	741	730
Pruem	127	122	128	105	114	132	154	166

Question. Will the Korea schools be needed if the previously announced troop withdrawals take place?

Answer. If the previously announced withdrawals of troop units take place, there will still be a need for DoD schools in Korea. Personnel of these units have only ten children in DoD schools in Korea. Only six of these students are in the present enrollment of approximately 800 students in the Seoul High School.

Question. List the school requirements in priority order.

Answer. School projects listed in order of priority are as follows:

Installation and country	*Project*
Wiesbaden, Germany	Elementary School.
Iwakuni Marine Corps Air Station Japan	Elementary and High School.
Sagamihara, Japan	Elementary School Addition.
Seoul, Yongsan Garrison, Korea	High School.
Osan Air Base, Korea	Elementary School.
Taegu, Korea	Elementary and High School.
Aschaffenburg, Germany	Elementary School Addition.
Yokota Air Base, Japan	Elementary School (West).
Clark Air Base, Republic of Philippines	Elementary School Addition.
Bad Hersfeld, Germany	Elementary School Addition.
Ludwigsburg, Germany	Elementary School Addition.
Bermuda, Naval Air Station	Elementary and High School Addition.
Baumholder, Germany	High School Addition.
Pruem Air Station, Germany	Elementary School Addition.

ASCHAFFENBURG ELEMENTARY SCHOOL ADDITION, ASCHAFFENBURG, GERMANY

Question. How do you accommodate the shortage now? Are you on double sessions?

Answer. There is a shortage of six classrooms to accommodate properly the currently enrolled students. The school is not now on a double session schedule. It is considered best to avoid double sessions as long as possible by continuing to crowd the students into the existing facilities.

Question. You are not replacing any of the substandard teaching stations. Will they continue in use?

Answer. The eleven substandard classrooms will continue in use. Development of a project to replace these substandard classrooms will be considered when more urgently needed facility requirements worldwide have been met. This project to add six classrooms at an early date to alleviate an existing facility shortage is considered more essential than replacement of the substandard classrooms.

BERMUDA ELEMENTARY AND HIGH SCHOOL ADDITION, NAVAL AIR STATION, BERMUDA

Question. Why do you need air-conditioning in Bermuda?

Answer. During at least half of the school year, the high humidity in the schools is very uncomfortable to all personnel and creates an unfavorable learning environment. This high humidity also creates many problems involving damage to books, films, equipment, and learning aids throughout the school. Temperatures in the eighties and nineties in combination with high humidity is debilitating and destructive to concentration and alertness in the classrooms. This school facility qualifies for air conditioning under the construction criteria promulgated by DoD 4270.1–M, "Construction Criteria Manual."

SEOUL HIGH SCHOOL, YONGSAN GARRISON, SEOUL, KOREA

Question. If the Osan school is built, will it free up facilities that can be used for part of this requirement?

Answer. No, Sir. The school on the Osan Air Base is for elementary students only. The Osan high school students will still be bused to Seoul to attend the Seoul High School.

OFFICE, SECRETARY OF DEFENSE, VARIOUS

Question. Provide an accounting for the use of this authority for the past five years. Show the amount authorized, the amount appropriated and the projects accomplished using this authority.

Answer. During the past five years, the following use has been made of the Secretary of Defense Contingency Fund:

MILITARY CONSTRUCTION, DEFENSE AGENCIES

Construction contingency authority and funds
Utilization—FY 1976 to date

	Thousands
Projects approved in fiscal year 1976:	
Army:	
Additions and alterations to facilities in Germany to support early development of a mechanized combat brigade	$ 4,347
Defense satellite system operations building, classified location	2,145
Laser test facility, White Sands Missile Range, New Mexico	2,324
Subtotal, Army	8,816
Air Force:	
Additions and alterations to facilities in Germany to support early development of a mechanized combat brigade	3,766
Addition to aerospace data facility, Buckley Air National Guard Base, Colorado	1,025
Subtotal, Air Force	4,791
Total authorized in fiscal year 1976	13,607
Projects approved in fiscal year 1977:	
Army:	
Construction of dependent schools to support relocation of an Army Brigade to the Bremerhaven area, Germany	12,500
Air Force: Construction of Minuteman storage facilities	3,800
Total authorized in fiscal year 1977	16,300
Projects approved in fiscal year 1978:	
NSA: Installation of emergency power plant, air conditioning and modifications to operations building at a classified location	1,800
OSD: Electronic test station for a classified activity	466
Navy: Rehabilitate POL facilities, Japan (second cost adjustment on project initially authorized in fiscal year 1972 at $6.775 million)	940
Air Force:	
Initial facilities to support the early deployment of the A-10 weapon system in Europe	2,530
Upgrading of airfield facilities at Tonopah Test Range, Nevada	6,050
Subtotal, Air Force	8,580
Total authorized in fiscal year 1978	11,786
Projects approved in fiscal year 1979:	
Army: Construction required in the Panama Canal Zone to permit relocation of military functions required under terms of the Panama Canal Treaty	10,900
DMA: Modification of two facilities at the Defense Mapping Agency Aerospace Center, St. Louis AFS, MO, to meet Air Force requirements associated with deployment of the cruise missile force	2,900
Total authorized in fiscal year 1979	13,800
Projects approved in fiscal year 1980 (to date):	
NSA: Construction to support relocation of existing remote collection activities	2,379
Navy: Provide temporary facilities for increased operations at Naval Support Facility, Diego Garcia	8,600

The amounts authorized and appropriated during the last five years are as follows:

SECRETARY OF DEFENSE CONTINGENCY FUND

[Dollar amounts in thousands]

	Authorization		Appropriation	
	Public Law	Amount	Public Law	Amount
Fiscal year:				
1976	94-107	$10,000		
1977	94-431	10,000	94-367	$3,000
1978	95-82	20,000	95-101	20,000
1979	95-356	10,000	94-374	10,000
1980	96-125	15,000	96-130	5,000

Question. What is your current balance of unused authority?

Answer. The current balance in this account as of March 28, 1980 is: Authorizations $15,532,000; Appropriations $5,532,000.

MINOR CONSTRUCTION FACILITIES, VARIOUS

Question. Provide an accounting for your exigent authority for FY 79 and 80. How much did you get, what did you use it for, what is your current unused balance?

Answer. The exigent minor construction authorized and appropriated for FY 79 and FY 80 are as follows:

	Authorized	*Appropriated*
FY 79	$2,140,000	$2,140,000
FY 80	4,200,000	1,200,000

A listing of projects accomplished under this authority follows:

FY 1979:	
Defense Mapping Agency:	
DMA Aerospace Center, St. Louis, MO	*Approved amounts*
Automatic Chiller Plant, Building 36	$450,000
This project provides for automatic capacity control of the chilled water system and interfacing this with a central energy monitoring and control system. This will reduce energy consumption and, based on an economic analysis, the investment cost will be amortized through maintenance and operations cost savings in 2.9 years following completion of construction.	
Defense Logistics Agency:	
Defense Depot, Memphis, TN	
Improve Break Area Facilities	220,000
This provides for construction and alteration work in 16 separate areas to provide adequate eating and work-break facilities for employees. Project is required to counter a morale and productivity problem. The upgraded areas will also provide needed work site facilities which currently are non-existent.	
Defense General Supply Center, Richmond, VA	
Hazardous Materials Recoupment Facilities	299,000
This provides for construction of proper facilities for repacking of hazardous materials. Existing facilities lack proper ventilation, explosion proof electrical fixtures and spill containment features. Adequate facilities are required to overcome hazards to health and safety of personnel and property.	
National Security Agency:	
Naval Air Station, Key West, FL:	
Construction required in support of classified mission	295,000
Fort George G. Meade, MD	
Silver Recovery Unit	380,000
This will provide a facility in which to recover precious metal from equipment and materials which have outlived their usefulness. A separate facility will permit a more efficient and cost effective operation.	

	Approved amounts
FY 1980:	
Defense Logistics Agency:	
Defense Property Disposal Office, Roosevelt Roads, PR	
Defense Property Disposal Facility Relocation	496,000
This provides construction to provide a centralized site for the Defense Property Disposal Office on the Roosevelt Roads Naval Station for disposal operations originally conducted at Fort Buchanan. Relocation from Fort Buchanan was required because of the closure of that installation.	
Defense Communications Agency:	
Defense Commercial Communications Office, Scott Air Force Base, IL.—install air conditioning and Backup Power	250,000
This project provides for additional air conditioning required to maintain proper environmental control for ADP equipment, and back-up power to eliminate power outages which have seriously interrupted computer operations.	
As of March 17, 1980 the unused balance was:	
Authorization	6,210
Appropriation	3,210,000

FAMILY HOUSING

Question. You have recently furnished to the Congress a study concerning the metering of military family housing. What are the main findings and recommendations from that study?

Answer. The results of the metering test suggest that the legislation as now written should not be implemented. While retrofitting existing housing for metering and billing occupants is feasible, though extremely costly, the norm for determining appropriate energy allowances is not sufficiently accurate to bill individuals. The Department of Defense has concluded, based on results of tests, that the best approach to energy conservation in family housing is a combination of continuing aggressive consumer education coupled with increased emphasis on energy conservation facility improvement.

Question. Are you preparing a legislative proposal to repeal Sections 506 and 507, Public Law 95–82? Would you support repeal of these sections?

Answer. No, we have not prepared repeal legislation, but we would not object to such action by Congress.

Question. Why do you need Section 605 authorizing the settlement of claims? What have you done in similar situations in the past?

Answer. In order to settle claims in excess of authorized statutory limitations, we must obtain special legislation, each time, in the annual Military Construction Authorization Act. The delay involved in drafting the legislation, submitting it for consideration by Congress, and awaiting enactment, often adds additional costs to the settlement as a result of accumulated interest payments. This approach has been costly in the past. The proposed legislation would permit immediate payment of settled claims, thereby avoiding interest charges, subsequent to Congressional notification and a thirty day waiting period.

Question. Why do you need Section 606? Aren't occupants of military family housing paying for damage now?

Answer. The legislation is required to permit the services to recoup costs of damages to housing by occupants. Some occupants of housing are paying for damages now, but present authorities generally require major legal actions to be taken to recoup the costs of damages. The effort in many cases is very time consuming, and costs associated with taking major legal action exceed the amount which would be recouped, with the effect being that action is not taken to begin with. In those cases where damages are assessed, the percentage of the actual number of cases paid is unsatisfactory.

Question. Justify the requirement for Section 607.

Answer. This section would exempt housing constructed or acquired by the State Department on behalf of Department of Defense personnel from the maximum statutory square foot limitations. This would permit the State Department to effectively implement future authorizations by combining our requirements with theirs. State Department standards differ from ours at the present time. Passage would also permit moving closer to the single manager concept for overseas facilities directed by Congress.

Question. Provide for the record available statistics on the collection of costs of damage to family housing by occupants.

Answer. It should be noted that costs for repairing occupant damage are not assessed in all cases, primarily due to the cumbersome process involved and the perceived lack of success on the part of local housing managers in obtaining reimbursement. However, in those cases where damages are assessed, collection rate are stated by local housing managers to range between 40% and 90%. These estimates have been obtained in recent years during field visits by OSD personnel. Recent audit reports have indicated the lack of success in obtaining reimbursements from occupants for damages to housing (extracts from these audit reports are attached). As stated earlier in testimony the judicial process now required to obtain reimbursement is too cumbersome to stimulate improvement. Legislative authority, as requested, would ease the burden and make attempts to collect for occupant damage worthwhile.

Audit Report C42829, Marine Corps Base, Camp Lejeune, North Carolina

COVERING FUNCTIONAL AREA: PROPERTY JANUARY 25, 1980, NAVAL AUDIT SERVICE SOUTHEAST REGION

18. Establishing followup procedures for pay checkages

(*a*) Pay checkages for damage to Government property are not verified by the Family Housing Office. Lack of proper followup has resulted in over $31,800 of unverified pay checkages during a 4-year period.

(*b*) NAVMC Form 6 (Request for Checkage for Government Property) is used to collect for damages. The member is instructed to hand deliver the completed form to his company office to be included in the unit diary. It is then sent to the Disbursing Officer where it should be endorsed and a copy returned to the Family Housing Office. Our review showed that during the 4-year period ending 31 December 1978, 471 checkages totaling $31,813.74 had not been endorsed and returned to the Family Housing Office. This condition has deteriorated over the 4-year period as shown below:

Year	Total checkages	Checkages not returned	Percentage
1975	333	84	25.2
1976	337	88	26.1
1977	244	105	43.0
1978	240	194	80.8

A further review of CY 1978 checkages not returned showed that the four major commands had a high nonreturn rate. Results are as follows:

Command	Total checkages	Checkages not returned	Percentage
MCB	19	11	57.9
2d MARDIV	130	109	83.8
2d FSSG	73	62	84.9
MCAS (H)	18	12	66.7
Total	240	194	

Although 130, or 67 percent, of the checkages not returned during CY 1978 had been signed by the member consenting to the checkage, a followup was not instigated. Because of the rapid mobility of Marine Corps personnel, failure to follow up in a timely manner increases the probability of not collecting.

(c) A further review of the 194 checkages not returned during CY 1978 showed that 64, valued at $5,960, had not been signed by the member. Some examples are shown below:

	Amount	Command
Date:		
Feb. 3, 1978	$847.30	2d FSSG.
Feb. 10, 1978	489.00	2d MARDIV.
Mar. 17, 1978	206.55	MCAS (H).
Oct. 2, 1978	147.47	MCB.

Without the members' consent, a checkage for damages cannot be collected except through judicial process. During CY 1978, the Base Housing Office did not refer any claims for damage to the Judge Advocate General (JAG) for judicial processings.

Recommendation 38.—MCB establish a procedure to follow up and verify that checkages for damage to Government property are accomplished when members have consented to the checkage.

Recommendation 39.—MCB establish administrative guidelines for collecting debts involving damage to family housing through the judicial process.

MCB response (Recommendation 38).—Concur. Followup actions are being studied and practical procedures will be implemented by 1 October 1979. Procedures will include direct liaison with MCFC, Kansas City to ensure checkages are accomplished.

MCB response (Recommendation 39).—Defer to CMC. MCB has researched the legality of establishing administrative guidelines for collecting debts involving damage to family housing. Current regulations do not allow for a practical means of collection without a member's consent.

NAVAUDSVCSE comment (Recommendation 39).—The intent of this recommendation was the establishment of procedures to get the checkages into the judicial process when necessary since this is the only course of action for the Navy and Marine Corps under current regulations. The audit finding states that the condition has deteriorated over a 4-year period and no claims for damage had been referred to the JAG. The Department of Defense Military Pay and Allowances Entitlement Manual, chapter 7, par. 70702, authorizes administrative procedures for the Army and Air Force. CMC should initiate action to determine if this administrative procedure could be extended to the Marine Corps.

Audit Report C46069, Marine Corps Logistics Base, Albany, Georgia

COVERING FUNCTIONAL AREA: PROPERTY—FEBRUARY 27, 1980, NAVAL AUDIT SERVICE SOUTHEAST REGION

6. Collecting for occupant damages

(*a*) Charges were not always collected for damages caused by the occupant In addition, collections for occupant damages did not include all costs for repairing damages. Also, occupant responsibility for damages could not always be determined due to incomplete records. Our review of maintenance records for 50 housing units for an 18-month period ended 30 June 1979 showed that approximately $1,721 was not collected for occupant damage. Total cost for occupant damages should be collected and complete records should be maintained to determine occupant responsibility.

(*b*) Occupant responsibility was determined by selecting damages which by their nature appeared to be occupant responsibility. Also, 10 of the 50 unit folders reviewed contained the prior occupants' check-in/out record. This record was compared to the current occupants' check-in record which showed that the prior occupant should have been responsible for much of the damage. Real Property Facilities Manual, MCO P11000.15, par. 1105, provides that occupants of family housing shall be responsible, insofar as practicable, for the same routine housekeeping and related servicing of their living units and immediate grounds as would be expected of tenants in private housing. Occupants should be responsible for all damages beyond those of normal wear and tear.

(*c*) Our review of 150 unit folders showed that 136 did not contain the prior occupants' check-in/out record. In addition, 18 did not contain the current occupants' check-in record. It would be difficult to prove occupant responsibility for damages without these records. NAVCOMPT Manual, par. 07528, provides that these records will be retained in the unit folders. These records can serve as an audit trail to determine if the cost for occupant damage was collected.

(*d*) Review of 15 collections for occupant responsible damages showed that labor costs were not included as a part of the charges. Seven of the 15 collections reviewed showed that $172 was collected as occupant damage. However, the estimated cost was $334. Records did not contain sufficient detail to determine the correct cost for the remaining nine collections reviewed.

Recommendation 5.—MCLB Albany, Georgia ensure that collection is made for all occupant damages, as provided in MCO P11000.15, par. 1105.

Recommendation 6.—MCLB Albany, Georgia ensure that occupants' check-in/out records are retained for determining occupant responsibility and for future reference, as provided in NAVCOMPT Manual, par. 037528.

MCLB Albany, Georgia response (Recommendation 5).—Concur in principle. It must be noted that it is not always possible or practical to collect for damages; however, every effort will be made to do so in accordance with MCO P11000.15.

MCLB Albany, Georgia response (Recommendation 6).—Concur. Check-in/out records are now being retained.

NAVAUDSVCSE comment (Recommendations 5 and 6).—MCLB Albany, Georgia actions should correct the conditions.

7. *Reducing electrical consumption for Government housing*

(*a*) Family housing electrical consumption exceeded energy conservation goals for FY 1978 by 2,253,675 kilowatt hours (kWh) costing $83,386. In addition, energy conservation goals have not been established for all family housing units.

(*b*) MCLB Albany, Georgia maintains 267 housing units at the Hill Housing Area and 426 housing units at Housing Area One. The FY 1978 energy conservation goal for the 267 Hill Housing Area units of 3,911,825 kWh was exceeded by 58 percent. The additional cost of this excess energy consumption was $83,386. In addition, at the end of the third quarter of FY 1979, the Hill Housing Area exceeded the energy conservation goal by 1,792,400 kWh, or an excess energy cost of $66,319. Energy conservation goals have not been established for the 426 housing units at Housing Area One. We determined that the 693 Government housing units average about 1,031 square feet of living area. Government housing exceeded the kWh usage of similar community housing by about 2,484 kWh per unit annually.

(*c*) High costs of electricity and continued emphasis on energy conservation, as outlined in MCO 4100.4A, require that more aggressive action be taken to reduce electrical consumption in Government housing. Audit Report C46016, dated 3 June 1976, reported a similar condition.

Recommendation 7.—MCLB Albany, Georgia establish energy conservation goals for all Government housing.

Question. Justify the increased authorization requested in Sections 608 and 609. What happens if you don't get this authority?

Answer. The projects at Oahu, Hawaii, and Centreville Beach, California, require additional authorization, but no funds, to complete construction. In the case of Oahu, construction is almost completed, but soil conditions, unforeseen at the time have added to the costs. In both cases, the additional authorization required exceeds the 10% flexibility we have to go beyond the line item amount originally authorized. If the authorization is not increased, the projects cannot be completed.

Question. You have not included in Section 610 or anywhere else in Title VI an authorization for appropriations for new construction (Section 601), improvements (Section 602), or advance planning and design (Section 603). Why?

Answer. Authorization for appropriation of family housing construction funds is contained in section 702(6) as in previous years.

Question. Explain in detail why you are departing from the format used in PL 96–125.

Answer. PL 96–125 and prior Military Construction Acts authorized appropriations for (1) construction and (2) O&M separately in the Family Housing Title, and then in total under a following title in Authorization for Appropriations and Administrative Provisions; accordingly, authorizing appropriations in both titles is redundant. Since there is standing authority to operate and maintain the inventory, the authorization for appropriations to do so is retained in the Family Housing Title. Authorization for appropriations for construction type work (public works) is reflected in the general title so that "public works" type projects are reflected in the same title. The change was made to remove redundancy, and to reflect only public works (not O&M) in the section on public works along with the service titles.

Question. You are proposing a substantial departure from past practice with respect to leasing. Previously there has been a statutory average lease cost which tended to keep lease costs down. Now you are proposing to delete that average and specify only a maximum lease cost. What incentive will there be to keep lease costs down under your proposal?

Answer. The services will be restricted during the allocation process to a specific dollar amount in line with the budget request. Exceeding the limitation specified in the allocation would be a violation of statute. Each service will have to exercise its management ability in trading off total numbers of leases for increased costs and vice-versa. We believe the services should have this flexibility and the authority to make such trade-off decisions at their level.

Question. On page 2 of Mr. Fliakas' statement the average number of occupied leases is 18,048 for FY 80 and 21,197 for FY 81. You have authority for 27,000 leases. Why the difference?

Answer. The difference relates to units which are or will be beneficially occupied during the period, and lease construction agreements entered into which cover units which will not be completed and available for occupancy.

Question. You are indicating only about 6,000 domestic lease spaces in effect at end FY 81. Can the statutory limit be reduced to that number?

Answer. It would not be prudent to do so. If the services are permitted the flexibility to make trade-off decisions on numbers versus average cost, as previously discussed, the number of domestic leases could increase beyond present budget projections.

Question. By Service, by domestic versus foreign, show the actual or estimated average lease-costs per month for FY–77 through FY–81. Show the total number of leases for each of those years and the total amount appropriated or requested in support of that program.

Answer. The following estimates are based on information provided by the Services. The average costs for foreign leases includes high-cost units which are excluded from the statutory average. Also, foreign lease costs may exclude advance rental payments made in FY 1979 or a prior year. Chart is attached.

FAMILY HOUSING LEASING PROGRAM ESTIMATED UNITS AND AVERAGE COSTS

	Fiscal year 1977		Fiscal year 1978		Fiscal year 1979		Fiscal year 1980		Fiscal year 1981	
	Units	Average cost	Units	Average cost	Units	Average cost	Units	Average cost	Units	Average cost
Foreign:										
Army	5,146	NA	6,977	NA	7,489	$297	8,639	$318	10,162	$378
Navy	641	$500	678	$515	741	595	927	615	967	764
Air Force	2,137	390	2,473	410	2,789	480	3,790	494	4,790	538
Defense agencies	419	467	421	662	421	697	484	929	547	1,231
Domestic:										
Army	2,941	242	2,793	273	2,001	300	2,340	310	2,391	326
Navy	2,804	265	2,424	NA	1,467	300	1,818	310	2,171	335
Air Force	1,970	240	1,805	267	1,450	299	1,435	310	1,550	335

Question. It has been reported that, in some cases, occupants of substandard housing are forfeiting their full BAQ because O&M costs equal or exceed their BAQ. How widespread is this situation?

Answer. The services have informed us that the situation is quite prevalent, particularly in those cases where significant maintenance projects have been accomplished to upgrade what is referred to as "inadequate public quarters."

Question. It seems basically unfair to make occupants of substandard housing forfeit full BAQ. Would you support legislation which limited the amount that an occupant of substandard quarters would have to pay to a maximum of 75% of BAQ if O&M costs exceeded that amount?

Answer. As indicated, significant maintenance projects have been accomplished to upgrade many of these "inadequate" units. In all cases, occupants should be receiving value in excess of the amount of BAQ forfeited, even if forfeiture is at the 100% level. We do not believe that this is unfair. Accordingly, we would not support legislation limiting BAQ forfeiture to 75%, particularly in light of the ongoing maintenance upgrade work being accomplished.

Question. What is the total current backlog—in number of new family units—of family housing construction? (programmable deficit).

Answer. Programmable deficits total about 17,000. Roughly 10,000 for new construction and about 7,000 for new leasing.

Question. For your new construction you are indicating "turnkey" which includes design. Why are you asking for a separate design authorization and dropping the word "design" from the last line of Section 601(d)?

Answer. The design funds we are seeking cover post-acquisition construction as well as a certain amount of design associated with Turnkey projects. Since design has been requested as a separate line item, and not included in the project costs, it has been deleted from the definition of project costs. Also, included in the new line item are funds for advance planning affecting the out-years for both new and post-acquisition projects. Advance planning funds will enable the services to develop better cost estimates for budget purposes, and to move out faster on actual construction once projects are authorized by Congress.

Question. Your statements on solar systems are curious. How did you arrive at percents and costs without knowing whether or not they were cost effective?

Answer. I presume you refer to my statement that approximately 25 percent of the program would be analyzed for solar application and that this analysis would cost about $30 million. Previous experience has shown that about ¼ of our projects may be potential users of solar energy. All of these would be analyzed. These analyses would cost money. However we would not know if a project was cost effective until the analyses was complete. This is what the analyses would tell us, if this were a cost effective project and if we should go ahead with it.

MARINE CORPS AIR STATION, YUMA, ARIZ.

Question. Why is land acquisition necessary?

Answer. Sufficient suitable government land is not available. The required acreage is based on a requirement of 8 units per acre, plus a local requirement to provide a storm runoff retention area. The only government land available is in AICUZ Noise Zone 3, which precludes the construction of residential structures.

Question. What is the payback period on the solar system? The EC ratio?

Answer. Design has not yet progressed to the point where the cost of the solar system can be estimated. Therefore we cannot state what the payback period or the EC ratio will be at this time.

NAVAL COMPLEX, NEW LONDON, CONN.

Question. (*a*) Why do you need land acquisition for this project? (*b*) Are defense access road funds included in the FY 81 request? How much?

Answer. Government land is not available. A funding request for $450,000 has been included in the FY 1981 Defense Access Roads budget in support of this project.

FORT STEWART, GEORGIA

Question. Provide the details of the solar system payback period.

Answer. The total cost of the Fort Stewart solar system is $1,164,000. The annual savings in barrels of oil equivalent will be about 510. Thus less than ½ of one barrel of oil equivalent is saved annually for each $1,000 of investment. Based on current prices it would take 50 years to recover the initial investment, however, escalating the cost of oil for future years reduces this time period to about 20 years. If the initial investment cost is discounted and annual operating and replacement costs are added a new loss results and it is not possible to recover the cost of the system.

NAVAL AIR STATION, BRUNSWICK, MAINE

Question. (*a*) Why will design take two years? (*b*) Why not use turnkey?

Answer. (*a*) Design is already more than 30 percent complete and the project will be ready to advertise in October or November of this year. The design time will have been approximately 1 year.

(*b*) Turnkey projects are generally not economical below a minimum of 200 units.

LAJES FIELD, AZORES

Question. Justify the requirement for senior enlisted quarters.

Answer. The most recent housing survey indicates 65 senior enlisted personnel are either involuntarily separated from their families or occupying unsuitable community housing. Only 20 units of the proposed project address this shortage.

POST ACQUISITION CONSTRUCTION FAMILY HOUSING, VARIOUS CONTINENTAL AND OVERSEAS

Question. Provide payback period and EC ratio on all ECIP projects.

Answer. We do not have available the payback period and EC ratio on all ECIP projects. However the criteria under which these projects were developed were that no project would be included which did not save a minimum of 20 MBTU per year and that the program average must be at least 40 MBTU per year. Also each project must have a cost/benefit ratio in excess of 1.0 using standard present worth economic analyses.

FAMILY HOUSING IMPROVEMENTS, VARIOUS AIR FORCE BASES

Question. What are "foreign source units"; are they U.S. owned?

Answer. Foreign source units are owned by a foreign government and used by the services under terms of an international agreement.

Question. (Design and Advance Planning). (*a*) How were these figures derived? (*b*) What source of funds have you used for design and advance planning in the past?

Answer. Design costs associated with the FY 1981 program were deleted from the initial new and post-acquisition construction projects and line item limitations, and added together to a total of about $4.1 million. Advance planning in the amount of approximately $4.3 million was derived from service estimates on costs associated with planning efforts on out year programs, such as working drawings, preliminary studies, specifications, and cost estimates.

Design funds were previously included in project totals. Previously approved planning funds were used only to cover costs incurred on projects which did not proceed.

Question. (O&M). What is the family housing maintenance backlog? Show the backlog for the last five years.

Answer. The backlog reported by the services over the past five years follows:

1976—not available.
1977—$533 million.
1978—$664 million.
1979—$915 million.
1980—$807 million.

We are beginning a validation of this reported backlog to refine its scope and establish priorities.

Question. (Family Housing, Defense O&M). Provide for the record tables like that shown on page 103 for each service. Include in the table a figure showing an average estimate per family housing unit.

Answer. Average per unit costs are not applicable to every subelement. For example, management relates to total number of families as well as inventory. Average unit costs would be misleading if applied to this and other subelements. Service breakouts are attached.

FISCAL YEAR 1981 OPERATION AND MAINTENANCE PROGRAM WORLDWIDE, BY COMPONENT AND CATEGORY

[In thousands of dollars]

	Army	Navy	Marine Corps	Air Force	DIA	DLA	DMA	NSA	Total
Management	39, 387	22, 100	4, 788	24, 857	0	0	0	25	91, 157
Services	31, 092	20, 801	2, 995	31, 421	0	9	3	25	86, 346
Utilities	222, 231	105, 467	23, 863	167, 475	0	97	14	225	519, 372
Furnishings	45, 828	14, 558	2, 239	23, 190	0	5	1	345	86, 166
Miscellaneous	5, 949	227	10	1, 256	1, 459	10	0	3	8, 914
Total, operation	344, 847	163, 153	33, 895	248, 199	1, 459	121	18	623	791, 955
Maintanance	230, 409	215, 407	62, 853	266, 635	0	105	7	385	775, 801
Total, program	574, 896	378, 560	96, 748	514, 834	1, 459	226	25	1, 008	1, 567, 756
Reimbursements	−3, 678	−7, 287	−430	−4, 100	0	−5	0	0	−15, 500
Budget authority	571, 218	371, 273	96, 318	510, 734	1, 459	221	25	1, 008	1, 552, 256

GENERAL PROVISIONS

Question. For the last several years, you have deleted the phrase "exchange of Government-owned land" (Sections 701 and 802) in your legislative proposal and Congress has reinserted the language. Isn't the intent of Congress clear on this point? Why do you insist on deleting this phrase?

Answer. The intent of Congress is very clear on this point, however, the General Services Administration has objected to the inclusion of any exchange authorities in DoD's Military Construction Authorization bills and the Office of Management and Budget has therefore required the deletion of the phrase "exchange of Government-owned land" from our draft bills.

Question. Why are you proposing to delete Defense Agencies and NATO Infrastructure from title total limitations (Section 703)?

Answer. The elimination of the title total limitations for the Defense Agencies and NATO Infrastructure is tied directly to the inability to exercise cost variation authority for these two programs. Because of the limited size of the Defense Agencies program, there is virtually no latitude for exercising cost variation authority and remain with the title total of a given year. For NATO Infrastructure, should the need arise to increase authorization for this vital program, as it did in FY 1979, it could not occur without a Deficiency Authorization which would be needed to increase the title total. This, of course, would be untimely, as the new authorization would not be available in the year in which it would be required. If the general transfer authority also contained in the FY 1981 MCON request is approved, it could not be executed for these two accounts if the title total limitation remains. Deletion of title total limitations provides the necessary flexibility for these programs, that is currently inherent in the larger service titles.

Question. Justify the exemptions proposed for the 13 projects in Section 705.

Answer. The justification for the exemptions follow:

EXCEPTIONS TO REPEAL OF AUTHORIZATION FOR MILITARY CONSTRUCTION PROJECTS—SEC. 705: GENERAL PROVISIONS

Public Law	Section	Fiscal year	Installation	Project	Authorized amount (thousands)
Army:					
95-356	101	1979	Fort Jackson, S.C	Energy control system [1]	$3,300
95-356	101	1979	Fort Bliss, Tex	Regional sewage treatment plant upgrade.[2]	1,209
95-356	101	1979	Fort Monroe, Va	Regional sewage treatment plant upgrade.[3]	550
95-356	101	1979	Fulda, Germany	Barracks with dining [4]	4,603
95-356	101	1979	Kansas Army ammunition plant, Kansas.	Improvements to heating system.[5]	394
95-356	101	1979	Fitzsimons Army Medical Center, Colo.	Energy control system [6]	1,372
95-356	101	1979	Landstuhl, Germany	Hospital addition [7]	30,283
95-356	101	1979	Bindlach, Germany	Facilities modernization [8]	1,782
95-356	101	1979	Erlangen, Germany	Facilities modernization [9]	7,731
95-356	101	1979	Schweinfurt, Germany	Barracks [10]	2,299
Navy:					
95-356	201	1979	Naval Air Station, Jacksonville, Fla.	Energy monitoring and control system.[11]	765
95-356	201	1979	Naval Education and Training Center, Newport, R.I.	Municipal sewer connection [12]	2,500
Air Force:					
95-356	301	1979	Vandenberg AFB, Calif	Space transportation system [13]	32,100

[1] Project has been held in abeyance due to base realinement studies. We now expect early release for construction award.

[2] A prior GAO moratorium delayed this project. A recent (Oct. 4, 1979) GAO ruling states that the Army will pay its fair share of the project. We are negotiating with the sewage authorities of the city of El Paso, Tex., for an auditable proposal and have scheduled award dates prior to the end of September 1980.

[3] A prior GAO moratorium delayed this project. A recent (Oct. 4, 1979) GAO ruling states that the Army will pay its fair share of the project. We are negotiating with the sewage authorities of the city of Hampton Roads, Va., for an auditable proposal and have scheduled award dates prior to the end of September 1980.

[4] Project execution was delayed by local opposition to the project based on environmental concerns. The matter is presently in the German courts for resolution. We have State and Federal support. Opposition is from a local group.

[5] The Armed Services Committees of Congress felt it appropriate to continue using coal-fired boilers and reduced the project by $100,000. Studies to retain coal as the primary fuel have delayed the project.

[6] Project has been held in abeyance due to base realinement studies. We now expect early release for construction award.

[7] Design was delayed by the complexity of the renovations required to provide a complete and usable facility and the requirements to reduce cost severely impacted by dollar devaluation.

[8] The design was delayed by a major change in scope which was approved by Congress in September 1979.

[9] Design was delayed pending negotiations with city officals over the provision of heat from a city source.

[10] Design bid packages as finalized for this project would have necessitated cost overrun approval. The approval would have further encroached on station total authorizations as well as unobligated balances for the fiscal year 1979 MCA program. To avoid this undesirable aspect, the design will be reworked to bring the estimated cost to that approved in fiscal year 1979.

[11] The design of this project had to be revised to accommodate an interface with other energy conservation devices being installed at the station. The redesign will delay a construction start until after Oct. 1, 1980.

[12] The municipality did not obtain timely EPA approval (November 1979) for their proposed project which involved constructing both primary and secondary treatment plants. In addition, the State of Rhode Island did not fully fund their share of the proposed project once it was approved. The funds available were insufficient to provide for both the primary and secondary plants. Therefore, the municipality will initially build a primary plant requiring a redesign which will delay constuction start until October 1980 or later. The Navy contribution to the project is therefore not required until that time.

[13] This project was authorized in fiscal year 1979 MCP but was not funded. Since the IOC of the STS was subsequently slipped from June 1983 to December 1983, and since Congress requested that expenditures be stretched out to the maximum extent possible, Air Force chose to seek funding in fiscal year 1981 instead of fiscal year 1980.

Question. Aren't subsections 703(g) and 901(c) redundant?

Answer. Section 703(g) may be redundant in future years if we continue to budget specific funds for solar, however, at this time it allows us to award solar projects that may occur as late starters and for which funds have not been specifically programmed.

Question. Would a solar system be more or less likely to be built under Section 901 versus the existing 10 U.S.C. 2688?

Answer. Less likely.

Question. Has DOE seen and commented on your proposal in Section 901?

Answer. No.

Question. For the past five years how many reports have been made pursuant to 10 U.S.C. 2662 and how many fall between $50,000 and $100,000?

Answer. During the past five years a total of 513 reports have been submitted to the Armed Services Committees of the Congress pursuant to Section 2662 of Title 10, United States Code. Of these, 63 were reports on proposed real estate transactions between $50,000 and $100,000.

Question. Justify Section 905. Where did the requirement come from?

Answer. Section 905 responds to a request from the International Institute for Strategic Studies to the Secretary of Defense. Section 905 is required to permit a Department of Defense contribution of $350.000, from minor construction, toward the capital expenditure of the Institute in connection with its acquisition of a permanent headquarters building in London. Section 905 is almost identical to Section 805 of the Senate Armed Services Committee bill which was not sustained in conference. The Department of Defense benefits from the unique and independent role of the Institute in the dissemination of comparative data and analysis of the international balance of forces. The Institute's data and analysis carry a degree of credibility seldom associated with government data, which are often assumed by other governments to be self-serving. Even so, DoD generally is reluctant to provide financial support to such organizations, so as not to appear to undermine their independent character. In this particular instance, however, support is essential and is limited to the one-time capital requirements specified above. No continuing operational subsidy has been requested, and none is planned. Moreover, twelve friendly nations already have contributed $560,000 toward the requirement, thus eliminating any appearance of a disproportionate U.S. role in support of the Institute.

RESERVE FORCES

Question. I have received correspondence from Senator Robert Byrd concerning Army Reserve Centers needed at Bluefield and Fairmont, West Virginia. What is the status of these two projects? Could they be put under contract in FY 1981?

Answer. The status of the Bluefield, West Virginia project is as follows. The current project is a 6,024 square foot expansion and alteration to bring the existing 25-member Reserve Center to present standards and requirements of a 100-member Center. The present center is deficient in kitchen, library, latrine, assembly and parking facilities. The project was submitted by First Army as a candidate for the 1981 Fiscal Year Construction Program, but current funding limits and priorities have placed it in the 1982 Fiscal Year time frame. The project has proceeded smoothly through normal design procedures with a projected design completion date of September 1980. No major problems are foreseen and the project could be executed in 1981 if funds were authorized. The project has a current working estimate of $618,000. This estimate will likely change due to inflation or with further design refinements.

The status of the Fairmont, West Virginia project is as follows. The current project is a 7,573 square foot expansion and alteration to bring the existing 25-member Reserve Center to present standards and requirements of a 100-member Center. The present center is deficient in kitchen library, latrine, assembly, storage, organizational maintenance and parking facilities. The project was submitted by First Army as a candidate for the 1981 Fiscal Year construction Program, but current funding limits and priorities have placed it in the 1982 Fiscal Year time frame. The project has proceeded smoothly through normal design procedures with a projected design completion date of September 1980. No major problems are foreseen and the project could be executed in 1981 if funds were authorized. The project has a current working cost estimate of $667,000. This estimate will likely change due to inflation or with further design refinements.

Question. Provide for the record in constant and current dollars the Reserve Forces backlog of construction requirements and their construction appropriations/requests for FY-70 through FY-81.

Answer. The information is shown on the following chart:

HISTORY OF GUARD AND RESERVE BACKLOG, REQUESTS, AND APPROPRIATION, FISCAL YEAR 1970-81

	Engineering	Backlog		Request		Appropriation	
Fiscal year:	Index	Actual	Current	Actual	Current	Actual	Current
1970	836	(1)	(1)	53.1	137.0	53.1	137
1971	948	1,156	2,624	42.0	95.0	42.0	95
1972	1,048	1,342	2,755	89.7	184.0	90.581	186
1973	1,138	1,356	2,564	111.8	211.0	121.8	230
1974	1,204	1,496	2,674	126.2	226.0	128.2	229
1975	1,306	1,733	2,856	169.5	279.0	176.335	291
1976	1,425	1,815	2,741	236.8	358.0	236.8	358
1977	1,545	1,898	2,644	148.6	207.0	186.505	260
1978	1,674	1,804	2,319	176.1	226.0	176.1	226
1979	1,828	1,825	2,148	158.9	187.0	168.9	199
1980	1,992	2,117	2,287	100.0	108.0	120.0	129
1981	2,152	2,501	2,501	216.7	216.7	(2)	(2)

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[1] Backlog data for 1970 are not available.

[2] Current costs are fiscal year 1981 budget estimates figures which are actual costs adjusted by engineering News Record index factors then projected at 9 percent for fiscal year 1980 and 8 percent for fiscal year 1981.

Question. By component (Army Guard, Air Guard, etc.) what is the current backlog of construction?

Answer. The current backlog of $2,501,000,000 includes requirements for each component as follows:

Army National Guard	$736,000,000
Army Reserve	800,000,000
Navy and Marine Corps Reserve	252,000,000
Air National Guard	557,000,000
Air Force Reserve	156,000,000

These figures include allowances for planning, design, and minor construction, but do not include projected new requirements for mission changes or increased deterioration and are exclusive of requirements contained in the fiscal year 1981 request.

QUESTIONS SUBMITTED BY SENATOR GARY HART, ANSWERS SUPPLIED BY DEPARTMENT OF THE ARMY

GENERAL

Question. For fiscal years 1978, 1979 and 1980 provide a listing showing:

a. Amount authorized.

b. Current Working Estimate.

c. Project status (Completed and closed out, completed and being closed out, under construction, under design, delayed, deferred, cancelled).

(1) For projects under construction, indicate the estimated completion date.

(2) For projects under design indicate the estimated date of construction award.

(3) For projects delayed, deferred or cancelled indicate the reason?

Answer. Project listings for the major Army projects in fiscal years 1978, 1979 and 1980 are attached.

DESIGN/CONSTRUCTION STATUS

CAC—Construction all complete (physically complete but not fiscally completed).
CFC—Construction fiscally completed.
C—Construction.
D—Design.
AUTH—Authorized but not funded.
CAN—Cancelled.
999—Funded General Authorization.

DESIGN CODE

1—Site investigation.
2—Concept design.
5—Design deferred.
6—Final design.
7—Design deferred.
9—Construction contract award.

FISCAL YEAR 1978 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
FORSCOM						
Fort Bragg:						
317000/37099—Special Forces medical training.	$450		February 1979	$456	9	
323000/37099—Dental clinic	3,695		July 1980	3,526	9	
333000/37099—Upgrade sewage treatment facilities—WPC.	7,950		November 1980	7,622	9	
339000/37099—Light conversion	3,881		January 1980	2,790	9	
Total	15,976			14,394		
Fort Campbell: 262000/21128—Ammunition security improvements.	553		October 1980	836	9	

See footnotes at end of table.

FISCAL YEAR 1978 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
FORSCOM—Continued						
Fort Carson:						
287000/08135—Flight simulator building	815	Authorized but not funded		0	7	
299000/08135—Exterior electric distribution system.	492		November 1979	342	9	
301000/08135—Conversion to flourescent lights.	617		March 1980	636	9	
Total	1,924			978		
Fort Hood:						
340000/48396—CIDC field operations building.	890	Authorized but not funded (see fiscal year 1980).		0	7	
349000/48396—Water supply system	3,784		January 1980	3,069	9	
350000/48396—Dental clinic	3,500		June 1980	3,706	9	
374000/48396—Sand/oil intdrceptors—WPC.	1,768		April 1980	1,964	9	
384000/48396—Regional sewage conn.—WPC.	3,200		March 1981	4,750	9	
Total	13,142			13,489		
Fort Sam Houston: 092000/48399—Alterations BAMC hospital buildings.	10,000		March 1982	8,600	9	
Fort Lewis:						
349010/53456—Instrument landing system.	615	Authorized but not funded		0	7	AUT
358000/53456—Dupont outfall—WPC	370		May 1979	453	9	CAC
Total	985			453		
Fort George G. Meade:						
220010/24571—Alter street lighting	744	Cancelled (not cost effective)		0	8	CAN
Fort Ord:						
248000/06653—Tactical equipment shops and facilities.	2,671		May 1980	2,604	9	C08
251000/06653—Direct support maintenance facility.	1,478		November 1980	2,192	9	C94
Total	4,149			4,796		
Fort Polk:						
108000/22722—Hospital	44,340		April 1980	43,950	9	C12
141000/22722—Tactical equipment shops	4,380		March 1981	5,150	9	C02
Total	48,720			49,100		
Fort Richard: 262010/02736—Insulate and heat controles, PH2.	1,990		April 1979	1,971	9	CAC
Fort Riley: 244000/20756—Flight control tower.	531		April 1980	590	9	C
Presidio of San Francisco: 202000/06776—Heat recovery.	500	Authorized but not funded		0	8	CAN
Schofield Barracks:						
082000/15776—Barracks modernization	9,620		December 1979	9,420	9	C9
090000/15776—Flight control tower wheeler	569		February 1979	608	9	CAC
Total	10,189			10,028		
Fort Stewart:						
147000/13834—Battalion headquarters and classroom buildings.	793	Authorized but not funded		0	7	AUT
148000/13834—Brigade headquarters	1,119		August 1979	1,200	9	CAC
158000/13834—Direct support maintenance facility.	6,893		November 1980	7,735	9	C25
161000/13834—CO administrative building.	801	Authorized but not funded (see fiscal year 1980).		0	7	AUT
163000/13834—Tactical equipment shops and facility.	1,385		October 1979	1,711	9	CAC
Total	10,991			10,646		
Fort Wainwright:						
145000/02955—Insulation and heat controls.	3,117		April 1979	2,476	9	CAC
148000/02955—Field house addition	2,916		February 1980	3,466	9	C93
150000/02955—Flight simulator building.	952	Authorized but not funded		0	7	AUT
Total	6,985			5,442		
Command total	127,379			121,823		

See footnotes at end of table.

FISCAL YEAR 1978 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
TRADOC						
Fort Belvoir:						
429000/51062—Energy control system	4,654	Authorized but not funded (see fiscal year 1980).		1,555	7	AUT
431000/51062—Heating fuel storage tanks	480	Authorized but not funded		0	7	AUT
432000/51062—Emergency power sewage pumping—WPC.	369		January 1980	635	9	CAC
Total	5,503			2,190		
Fort Benning:						
311020/13077—Training ranges	0		November 1978	3,291	9	CAC
313000/13077—Reception station	5,886	Authorized but not funded		0	7	AUT
317000/13077—Barracks complex trainees.	14,967		do	14,008	9	COO
331000/13077—Dental clinic	3,279		August 1980	3,460	9	C01
Total	24,132			20,759		
Fort Bliss:						
336000/48083—Water storage tank	486		September 1978	262	9	CAC
345000/48083—Insulate buildings	557		May 1980	402	9	C82
346010/48083—Energy control system	743	Auth but not funded		0	7	AUT
346020/48083—Gas hot water heaters	95		January 1979	79	9	CAC
Total	1,881			743		
Fort Benjamin Harrison: 107000/18351—Regional sewage treatment—WPC.	1,796		December 1979	2,245	9	CAC
Fort A. P. Hill: 044000/51389—Sewage treatment plant—WPC.	423		March 1980	619	9	CAC
Fort Jackson: 124000/45404—Water pollution control—WPC.	366		April 1980	324	9	C98
Fort Knox:						
157000/21478—Tactical equipment shops and facilities.	5,672		January 1980	6,148	9	C71
292000/21478—Maintenance instruction facilities TAS.	9,869		July 1980	6,680	9	C85
Total	15,541			12,828		
Fort Lee: 141000/51484—Dike for pol. training area—WPC.	313		April 1980	425	9	CAC
Fort McClellan: 268000/01567—Heat and cooling system improvements.	1,805		do	1,976	9	C92
Fort Rucker:						
039000/01767—Aeromedical research building.	0		September 1980	7,799	9	C68
218010/01767—Energy control system	1,250		December 1980	1,197	9	CAC
Total	1,250			8,996		
Fort Sill:						
211000/40801—Troop medical clinic	370		January 1979	346	9	CAC
279000/40801—Pol. pollution abatment—WPC.	730		August 1979	547	9	CAC
Total	1,100			893		
Command total	54,110			51,998		
MDW						
Fort George G. Meade: 220020/24571—Storm windows and insulate, command total.	2,424		February 1980	1,600	9	CAC
DARCOM						
Aberdeen Proving Grounds:						
171000/24004—Chemical storage security, upgrade.	6,738		July 1980	6,927	9	C41
269010/24004—Energy control system	1,600		do	718	9	C76
269020/24004—Add capacitors elec. dist	120	Canceled (not cost effective)		0	8	CAN
Total	8,458			7,645		

See footnotes at end of table.

FISCAL YEAR 1978 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction Code	Design construction Status
Dacrom—Continued						
Anniston Army Depot:						
07500/01035—Dynamometer test facility, addition.	1,656		April 1979	1,186	9	CAC
080000/01035—Checical storage security upgrade.	4,828		April 1980	8,578	9	C83
Total	6,484			9,764		
Badger AAP:						
007000/55057—Dredging bay—WPC	480	Terminated after award. Change in state standards.		383	9	CAV
013000/55057—Emergency power pumping station—WPC.	208		September 1980	65	9	CAC
Total	688			548		
Corpus Christie Army Depot:						
048000/48189—Heat treatment facility	2,693		December 1980	2,219	9	C85
049000/48189—Jet fuel test facility addition.	1,599		November 1979	927	9	CAC
051000/48189—Flammable storage and pol. facility.	614		August 1978	328	9	CAC
054000/48189—Upgrade industrial waste treatment—WPC.	2,677		March 1981	1,488	9	C95
Total	7,583			4,962		
Detroit Arsenal: 043000/26221—Energy control system.	228	Fiscal closeout July 1979		214	9	CFC
Diamond Laboratory: 014000/24230—Energy control system.	1,305		September 1980	1,305	9	C03
Indiana AAP:						
004010/18393—Incin. contaminating waste—APC.	530	Canceled due to change in state standards.		0	8	CA
005000/18393—Incin. explosive waste—APC.	474	do			8	CA
Total	1,004					
Iowa AAP:						
01400/19422—Insulate steam line	351		August 1978	212	9	CAC
021000/19422—Spill prevention control—WPC.	357		May 1980	145	9	C96
Total	708			357		
Letterkenny Army Depot: 064020/42416—Ammo truck inspection facility.	310	Authorized but not funded		0	7	AUT
Lexington Blue Grass Army Depot: 076000/21506—Chemical storage security, upgrade.	1,827		December 1979	1,572	9	C96
Lone Star: 004000/48513—Boiler plant alterations.	816		September 1979	843	9	CAC
Picatiny Arsenal:						
101000/34693—Physical sciences labs	2,536		September 1980	2,536	9	C34
102000/34693—Energetics lab	4,234		April 1981	5,640	9	C05
107000/34693—Regional sewage system—WPC.	2,823	1st phase completion June 1979—remainder to be reprogramed.		668	9	CAC
Total	9,593			11,918		
Pine Bluff Arsenal: 077000/05698—Chemical storage security, upgrade.	4,439		January 1981	2,620	9	C90
Pueblo Army Depot: 055000/08728—Chemical storage security, upgrade.	3,011		April 1980	1,341	9	C98
Red River Army Depot: 076010/48733—Bridge crane.	1,193	Authorized but not funded (now in proposed fiscal year 1981).		0	7	AUT
Redstone Arsenal: 235010/01750—Radar operation facility.	962		March 1981	0	7	AUT
Rock Island Arsenal: 062000/17755—Replace Moline bridge.	6,384		August 1981	8,942	9	C82
Seneca Army Depot: 059000/36794—Improve ammu storage.	1,331		October 1980	1,160	9	C84
Sierra Army Depot: 056000/06821—Improve ammo storage.	6,433		August 1980	8,186	9	C57
Tooele Army Depot: 077000/49878—Chemical storage, upgrade.	17,415		June 1980	13,920	9	C89
Umatilla Army Depot: 036000/41899—Chemical storage security, upgrade.	2,921		September 1980	1,999	9	CAC

See footnotes at end of table.

FISCAL YEAR 1978 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
White Sands Missile Range:						
274000/35970—Alter LC-33 dynamometer test area.	490		August 1979	557	9	CAC
338000/35970—Communications facility	376		December 1979	400	9	C99
Total	866			957		
Command total	83,959			78,575		
ISCOM						
Vint Hill: 078000/51925—Sewage treatment plant—WPC, command total.	960		July 1980	1,132	9	CB5
USACC						
Fort Huachuca:						
152010/04289—Insulation and windows alterations.	237		August 1978	55	9	CAC
152020/04289—Energy control system	469		June 1979	478	9	CAC
158000/04289—Boiler conversion—gas to gas/oil.	573		March 1979	672	9	CAC
Command total	1,279			1,205		
USMA						
USMA:						
125000/36903—Air condition printing plant.	238		March 1980	307	9	C98
133000/36903—Separate power, communications ducts.	1,260		July 1980	1,221	9	C38
139000/36903—Field house modernization	1,549		October 1979	1,531	9	CAC
Command total	3,047			3,059		
HSC						
Walter Reed: 098000/11933—Fuel oil storage and emergency generator, command total.	2,089		April 1980	2,246	9	C85
MTMC						
MOT Bayonne: 045000/34055—Heating fuel storage tank.	442	Authorized but not funded		0	7	AUT
Sunny Point:						
035010/37840—Explosive truck access Road.	319	Minor—canceled		0	8	CAN
037000/37840—Field operations office	312		August 1979	311	9	CAC
Total	631			311		
Command total	1,073			311		
USARJ						
Japan:						
153000/JA257—Dependent high school	2,901		April 1980	3,112	9	C82
154000/JA257—Cold storage facility	797		do	719	9	C85
Command total	3,698			3,831		
BMDSC						
KWAJALEIN: 213000/TQ496—Resurface aircraft parking, command total.	2,603		December 1979	2,474	9	CAC
FORSLOS						
Panama: 133000/PQ665—Modify ammo storage area, command total.	2,384		September 1980	2,808	9	C38

See footnotes at end of table.

FISCAL YEAR 1978 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
USAREUR						
Germany:						
141000/GE302—Hospital improvement—Nuernberg.	24, 197		August 1982	28, 230	9	C43
155000/GE302—Auditorium—Eschborn	276		April 1980	399	9	C99
157000/GE302—Barracks W/O dining—Dexheim.	1, 788		do	1, 775	9	C90
191000/GE302—Maintenance hardstand—Fulda.	377		February 1979	514	9	CAC
193000/GE302—Maintenance hardstand—Kitzingen.	470		June 1981	568	9	C78
195000/GE302—Elementary school—Stuttgart.	9, 221		March 1980	10, 871	9	C98
203010/GE302—Dental clinic—Heidelberg.	500	Scope problems (reprogramed to fiscal year 1981).		0	8	CAN
220000/GE302—Tactical equipment shop—Zweibron.	507		August 1979	523	9	CAC
223000/GE302—Flight control tower—Ansbach.	279		March 1980	315	9	CAC
227000/GE302—Basic load Chap/Vulv	2, 211		May 1980	2, 880	9	C90
230000/GE302—Tactical equipment shop—Kirchgoens.	288		April 1980	535	9	C97
232000/GE302—Convert ammo storage igloos—PH 1.	e697	Scop problems—To be reprogramed.		0	8	CAN
241000/GE302—Control pol. Pollution—WPC.	966		April 1980	1, 188	9	CAC
252000/GE302—Maintenance hardstands—Baumholde.	606		September 1978	580	9	CAC
254000/GE302—Auto coal boiler—Zweibkn.	3, 993		Nov. 1981 [2]	4, 917	9	C00
263000/GE302—Theater read now facility—Miesu.	2, 457		August 1980	2, 971	9	C02
265000/GE302—Electrical maintenance shop.	267		September 1979	215	9	CAC
267010/GE302—Pomcus maintenance comp—Kaiserltn.	0	In NATO program		0	8	CAN
268000/GE302—Operations Building A/C modification—Augsbg.	614	Scope problems—reprogram to fiscal year 1981.		0	8	CAN
270010/GE302—Pomcus maintenance—Pirmasens.	4, 429	In NATO program		0	8	CAN
274000/GE302—Commissary, additions and alterations—Fulda.	1, 151		July 1980	1, 416	9	C55
281000/GE302—Armament maintenance and storage, various.	2, 106		December 1980	3, 178	9	C03
283000/GE302—Noise and emission maintenance, APC.	384		July 1980	626	9	C15
294010/GE302—Pomcus maintenance—Germersheim.	0	In NATO program		0	8	CAN
295010/GE302—Pomcus maintenance—Gerszewski.	0	do		0	8	CAN
302000/GE302—Commissary, additions and alterations—Bremerhaven.	1, 552		December 1979	1, 948	9	C99
304000/GE302—Vechile parking—Bremerhaven.	575		October 1978	683	9	CAC
306000/GE302—Outdoor athletic facility—Garlstadt.	650		December 1979	678	9	C90
307000/GE302—Open mess—Garlstadt	3, 016		March 1980	3, 752	9	C95
309010/GE302—Pomcus maintenance—Mannheim.	0	In NATO program		0	8	CAN
311000/GE302—Ammo Storage—Boeblgn.	75, 797		April 1982 [2]	64, 090	9	C15
316000/GE302—Alterations, administrations building—Heidelberg.	540		May 1980	564	9	C00
324000/GE302—Community support complex.	4, 360		March 1980	5, 372	9	C92
325000/GE302—Gynasium—Garlstadt	1, 142		April 1980	1, 452	9	C95
326000/GE302—Chapel—Garlstadt	560		March 1980	791	9	C82
327010/GE302—Pomcus maintenance—Miesau.	0	In NATO program		0	8	CAN
328010/GE302—Pomcus maintenance—Nahbollenbach.	0	do		0	8	CAN
329010/GE302—Pomcus maintenance—Kaserne.	2, 839	do		0	8	CAN
Total	148, 815			138, 686		
Command total	148, 815			138, 686		

See footnotes at end of table.

FISCAL YEAR 1978 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
ITALY						
Italy: 119000/IT401—Improve ammunition storage, command total.	3,770		June 1979	5,240	9	CAC
EUROPE—OTHER						
Europe various:						
178000/EU030—NATO infrastructure	85,000	NA	NA	114,078	9	C10
178010/EU030—NATO reprogramed from fiscal year 1978 POMCU.	26,300	NA	NA	26,300	9	C10
319000/EU030—Improve ammo storage	6,800		July 1980	6,460	9	C65
Command total	118,100			146,838		
ASA—O/S						
Germany: 191010/GE302—Barracks with dining, command total.	1,331	Authorized but not funded		0	7	AUT
GENERAL—AUTHORIZATION						
General authorization:						
078000/99001—Planning	0	NA	NA	66,380		999
078300/99001—Minor construction	0	NA	NA	25,887		999
Command total	0			92,267		
Grand total	557,021			654,093		

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[1] Constitutes final award to complete project.

[3] Constitutes remaining award to complete project.

FISCAL YEAR 1979 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
FORSCOM						
Fort Bragg:						
335000/37099—Tactical equipment shops and facilities.	$5,894		March 1981	$5,222	9	C21
347000/37099—Energy control system	994		December 1980	855	9	C02
353000/37099—Pol. pollution abatment—WPC.	1,948		March 1981	1,716	9	C03
Total	8,836			7,793		
Fort Carson:						
099000/08135—Tactical equipment shops and facilities.	5,242		June 1981	4,656	9	C07
257000/08135—Direct support maintenance facility.	15,116		October 1981	14,522	9	C09
300000/08135—Dental clinic	1,632		June 1981	2,217	9	C00
305000/08135—Central vehicle wash facility—WPC.	3,646		April 1981	5,597	9	C17
Total	25,636			26,992		
Fort Devens: 146000/25176—Install windows—Heat recovery.	799		April 1980	445	9	C20
Fort Greely:						
119000/02347—Insulation and heat controls.	1,945		February 1980	1,795	9	C90
120000/02347—BOQ modernization	706		October 1979	771	9	CAC
Total	2,651			2,566		

See footnote at end of table.

FISCAL YEAR 1979 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
Helemano: 097000/15373—Tactical equipment shop—Helemano.	1,916		February 1980	2,102	9	CAC
Fort Hood:						
138000/48396—Communications and ADP center.	2,387		May 1980	2,047	9	C67
324000/48396—Addition Darnall Army hospital.	47,700		August 1982	24,000	9	C05
348000/48396—Barracks and dining facility, modernization.	7,115		December 1980	6,222	9	C62
358010/48396—Tactical equipment shop	2,314	Authorized but not funded (proposed in fiscal year 1982 program).		0	7	AUT
387000/48396—Ranges and training facilities.	2,570		May 1981	921	9	C80
Total	62,086			33,190		
Fort Sam Houston: 096000/48399—Dental clinic.	1,633		January 1981	2,177	9	C00
Fort Lewis:						
325000/53456—Moving target simulator	531		October 1979	524	9	CAC
343000/53456—Electric distribution system, improve.	1,776		May 1981	1,983	9	C22
354000/53456—Surgical and OB suite, addition.	3,307	May 1980		3,334	6	DAC
373000/53456—Pol, pollution control—WPC.	3,319		October 1980	3,563	9	C1
Total	8,933			9,404		
Fort McCoy: 024000/55533—Barracks with dining facility (canceled because of funding problems. To be programed in future year at increased cost).	991		July 1980	1,117	9	C53
Fort George G. Meade: 215010/24571—Composite dental facility.	10,669			0	8	CAN
Fort Ord:						
246000/06653—Dental clinic	1,628		August 1980	1,851	9	C36
248010/06653—Tactical equipment shops and facility.	0		May 1980	2,604	9	C80
Total	1,628			4,455		
Fort Polk:						
123000/22722—Dental clinic	1,978		October 1980	2,364	9	C38
140000/22722—Airfield support facilities, RW.	3,341		December 1980	4,090	9	C17
145000/22722—Advanced waste treatment—WPC.	7,506		July 1981	6,353	9	C11
172000/22722—DS maintenance complex	9,206		September 1981	10,615	9	C03
173010/22722—Tactical equipment shop and facility, (cancelled due to insufficient funds—Now in fiscal year 1981 program).	2,272			0	8	CAN
177000/22722—Energy control system	1,542		May 1981	1,316	9	C05
Total	25,845			24,738		
Fort Richard: 255000/02736—Engine fume exhaust system.	1,974		April 1980	932	9	CAC
Fort Riley:						
250000/20756—Tactical equipment shop and facility.	4,637		January 1981	4,745	9	C00
251000/20756—Dental clinic	1,278		October 1980	1,449	9	C24
Total	5,915			6,194		
Schofield Barracks:						
092000/15776—Sewage effluent disposal—WPC.	3,117		June 1980	1,948	9	C80
093000/15776—Barracks modernization	9,106		February 1981	8,501	9	C00
Total	12,223			10,449		

See footnote at end of table.

FISCAL YEAR 1979 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
FORSCOM—Continued						
Fort Stewart:						
061000/13834—Hospital	39, 348		June 1982	41, 755	9	C05
119000/13834—Tactical equipment shops and facilities.	7, 117		May 1981	8, 157	9	C05
144000/13834—Regional sewage system—WPC.	6, 133		August 1981	7, 160	9	C12
146000/13834—Dental clinic	2, 225		September 1980	2, 345	9	C78
170000/13834—Range and training facilities, PH 1.	2, 306		November 1980	1, 479	9	C20
Total	57, 129			60, 896		
Fort Wainwright: 149000/02955—Insulate/storm windows.	3, 323		June 1980	2, 427	9	C86
Yakima FR: 406000/53985—Pol. pollution control—WPC.	1, 270		January 1981	1, 580	9	C00
Command total	233, 457			197, 457		
TRADOC						
Fort Belvoir: 429010/51062—Energy control system.	0		October 1980	4, 450	9	C00
Fort Benning:						
259010/13007—Small arms repair and storage.	3, 645			0	7	AUT
326000/13077—Energy control system	1, 528		June 1980	1, 483	9	C00
Total	5, 173			1, 483		
Fort Bliss:						
069000/48083—Dental clinic WBAMC	1, 905		November 1980	2, 176	9	C00
357000/48083—Regional STP, upgrade—WPC (delayed awaiting guidance on on GAO decision).	1, 209	Award not scheduled		1, 209	6	DAC
362010/48083—Patriot training facility, alterations (authorizd but not funded in fiscal year 1979; authorized and funded in fiscal year 1980).	1, 644			0	7	AUT
Total	4, 758			3, 385		
Carlisle Barracks: 035000/42116—Replace underground steam distribution.	1, 601		December 1979	1, 098	9	CAC
Fort Eustis:						
113000/51281—Pier utilities	740		July 1980	418	9	C56
291010/51281—Cargo handling training facility (funding proposed in fiscal year 1981).	3, 666	Authorized but not funded		0	7	AUT
306000/51281—Refuse fired steamplant	947		February 1980	1, 524	9	C34
Total	5, 353			1, 942		
Fort Gordon:						
123000/13355—Energy control system	2, 201		January 1981	1, 631	9	C04
125000/13355—Hot water waste recovery system.	1, 046		March 1981	1, 124	9	C00
Total	3, 247			2, 755		
Fort Benjamin Harrison: 104020/18351—Windows/mod. steam-air system (canceled June 26, 1979; not cost or energy effective).	2, 359			0	8	CAN
Fort Jackson: 123000/45404—Energy control system.	3, 300	June 1, 1980		2, 839	6	DAC
Fort Knox:						
245000/21478—Cold storage plant, renovate.	1, 002	May 1980		1, 052	6	DAC
289000/21478—Flight control tower	702	March 1980		837	6	DAC
297020/21478—Energy control system	1, 960		August 1980	2, 053	9	C00
299000/21478—Control vehicle wash facility—WPC-PH1.	2, 100		February 1981	2, 203	6	DAC
299010/21478—Control vehicle wash facility—WPC-PH2.	2, 624	September 1980		4, 113	6	D60
300000/21478—Dental clinic	2, 272		March 1981	2, 733	9	C00
304000/21478—Tank training facility	3, 474		June 1981	3, 476	9	C70
306000/21478—Armor crew inter. simulator (canceled per recommendation of TRADOC).	924			0	8	CAN
Total	15, 058			16, 466		

FISCAL YEAR 1979 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
TRADOC—Continued						
Fort Leavenworth: 077010/20491—Energy control system.	2,251		April 1981	2,658	9	C14
Fort Lee:						
128000/51484—Dental clinic, additions and alterations.	1,869		January 1981	1,827	9	C14
140000/51484—Energy control system	1,205		April 1980	1,149	9	C30
Total	3,074			2,976		
Fort Monroe: 055000/51585—Regional STP, upgrade—WPC (delayed, awaiting guidance on GAO decision).	550			550	6	DAC
Fort Rucker: 213010/01767—Upgrade stagefields (authorized but not funded in fiscal year 1979; funded in fiscal year 1980).	2,280			0	7	AUT
Fort Sill:						
250000/40801—Tactical equipment shop and facilities.	1,673		December 1981	2,266	9	C02
261000/40801—Dental clinic	1,970		October 1980	2,429	9	C39
264000/40801—Barracks complex, trainees.	17,300		December 1981	18,637	9	C02
264070/40801—Chapel, 300 seats	845		do	1,102	9	C02
292000/40801—Insulate and night set back.	2,968		April 1981	3,000	9	C00
Total	24,756			27,434		
Fort Leonard Wood:						
145000/29977—Training facilities improvement.	3,188		May 1981	3,562	9	C19
152010/29977—Medical supply warehouse (authorized but not funded in fiscal year 1979; funded in fiscal year 1980).	2,477			0	7	AUT
177010/29977—Petroleum storage facility (canceled due to scope and funding problems; now in fiscal year 1981 at $5,200).	2,437			0	8	CAN
179000/29977—Storm windows and insulation.	5,845		August 1981	4,396	9	C00
Total	13,947			7,958		
Command total	87,707			75,993		
DARCOM						
Aberdeen Proving Ground:						
170000/24004—Demil./detox. facility—Edgewood—APC.	3,725		January 1981	1,632	9	C00
276000/24004—Improve sewage disposal—WPC.	5,587		May 1981	6,350	9	C00
Total	9,412			7,982		
Anniston Army Depot:						
076000/01035—Metal finishing facility	7,836		August 1981	8,500	9	C00
083000/01035—Industrial waste treatment, Upgrade—WPC.	2,900	May 1980		6,629	5	DAC
Total	10,736			15,129		
Hawthorne AAP: 001000/32350—SLU-FAE prod. base.	1,547		May 1981	2,269	9	C00
Holston AAP:						
015000/47408—Fume abat. nitric acid—APC (canceled no longer needed to meet state requirements).	1,650			0	8	CAN
27000/47408—Industrial waste treatment, PH2—WPC.	29,000		February 1982	28,622	9	C12
Total	30,650			28,622		
Indiana AAP: 004000/18393—Incin. contam. waste—APC (canceled due to change in State APC standards).	0			0	8	CAN

FISCAL YEAR 1979 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
Iowa AAP:						
016000/19422—Incin. contam. waste—APC (canceled—would not meet required standards).	501			0	8	CAN
017000/19422—Incin. explos. waste—APC.	527		April 1980	963	6	DAC
Total	1,028			963		
Kansas AAP: 008000/20450—Incin. contam. waste—APC (canceled—would not meet required standards).	620			0	8	CAN
009000/20450—Incin. explos. waste—APC.	504		April 1980	1,121	6	DAC
Total	1,124			1,121		
Longhorn: 006000/48515—Incin. explos. waste—APC (project cancled due to change in State APC requirements).	507			0	8	CAN
Michigan: 003000/26586—Install steam-boiler—APC (canceled due to change in air pollution standards).	1,284			0	8	CAN
Milan AAP:						
007000/47579—Incin. explos. waste—APC (canceled due to Congress denial of refunding request).	602			1,607	8	CAN
008000/47579—Incin. contam. waste—APC (canceled, would not meet required standards).	637			0	8	CAN
Total	1,239			1,607		
Natick Lab: 025000/25526—Air condition labs.	3,221		January 1982	2,935	9	C00
Picatinny Arsenal:						
103000/34693—Engineering admin. facilities.	14,119		March 1981	10,705	9	C50
109000/34693—Insulate steam distribution system.	2,262		do	380	9	DAC
Total	16,381			11,085		
Pine Bluff Arsenal: 057000/05698—Fuel oil storage.	523	September 1980		387	6	DAC
Red River Army/Depot: 072000/48733—Quality assurance lab.	813		August 1980	901	9	C30
Redstone Arsenal:						
258000/01750—Incin. contam. waste—APC.	716	July 1980	September 1981	716	6	D25
265000/01750—Upgrade sewage treatment—WPC.	2,600		March 1982	2,600	9	C00
269000/01750—Incin. explos. waste—APC.	509	July 1980	September 1981	1,201	6	DAC
Total	3,825			4,517		
Rock Island Arsenal: 072000/17755—Window alterations (canceled—not cost or energy effective).	1,957			0	8	CAN
Seneca Army Depot: 040000/36794—Gymnasium.	1,087		July 1980	1,219	9	C43
Sierra Army Depot: 060000/06821—Ammo storage security facilities.	843		June 1980	754	9	C64
Sunflower AAP:						
007000/20785—Incin. Explos. waste—APC (canceled due to technology change).	763			0	8	CAN
008000/20785—Incin. contam. waste—APC (canceled—would not meet required standards).	518			0	8	CAN
Total	1,281			0		
Tobyhanna Army Depot: 049000/42877—Insulate buildings.	1,227		March 1981	1,285	9	C00
Watervliet Arsenal: 043000/36939—Facilities modernization.	27,021		November 1982	20,355	9	C10

FISCAL YEAR 1979 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
Command total	115, 706			101, 131		
USACC						
Fort Huachuca: 145000/04289—Water production facilities.	3, 811		June 1980	3, 612	9	C67
Fort Ritchie: 068000/24745—Repair electric power generators.	5, 115		October 1982	5, 550	9	C03
Command total	8, 926			9, 162		
USMA						
USMA:						
100000/36903—Alter building for cadet support facilities.	5, 153		June 1981	5, 063	9	C00
145000/36903—Separate power and communications ducts.	2, 200		April 1981	145, 000	9	C19
172000/36903—Alter Michie Stadium and gym.	3, 634		May 1980	4, 080	9	C68
173000/36903—Outdoor athletic facilities.	1, 278		do.	1, 324	9	C67
Command total	12, 265			155, 467		
HSC						
Fitzsimons AMC: 043000/08297—Energy control system (project on hold pending realinement determination).	1, 372	Not scheduled		1, 676	6	DAC
Walter Reed: 100000/11933—Medical adm. and support alterations (to be reprogramed in future program because of funding problem).	3, 524	do.		3, 935	6	DAC
Command total	4, 896			5, 611		
MTMC						
Sunny Point AT: 036010/37840—Container restuffing facility, command total.	1, 228	April 1980		0	7	AUT
EUSA						
Korea:						
579000/KS325—Airfield repair, Humphreys.	4, 235		October 1979	0	9	C95
616000/KS325—Upgrade water system—Yongsan.	776		October 1980	878	9	C00
616010/KS325—Upgrade water system—Yongsan—Part.	102		do.	1, 070	9	C00
623000/KS325—Upgrade sewer systems—WPC.	2, 467		do.	2, 467	9	C00
Command total	7, 580			4, 415		
BMDSC						
Kwajalein: 207000/TQ496—Sewage treatment facilities—WPC, command total.	6, 571		May 1980	6, 254	9	C52
USAREUR						
Germany:						
188000/GE302—Hospital addition and alterations, Landstuhl (indirect award to FRG, September 1979); September 1980 award to industry is 1st of 3 phases.	20, 283	September 1980.		46, 407	6	D91
				0	6	DAC
207000/GE302—Barracks with dining—Fulda (indirect award, September 1979).	4, 603	August 1980.		8, 444	6	DAC
228000/GE302—Barracks—Schweinfurt	2, 299		August 1980	2, 500	9	C00
272000/GE302—Tactical equipment shop—Aschfnbg.	1, 814		September 1981	2, 115	6	DAC
282000/GE302—Pol. pollution control—WPC.	7, 852	Schedules follow		14, 449	9	C00
282010/GE302—Pol. pollution—Crailsheim—WPC.	0		August 1980	0	9	C00
282020/GE302—Pol. pollution—Kaiserslautern.	0		March 1981	0	9	C00

FISCAL YEAR 1979 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and, project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
USASEUR—Continued						
282030/GE302—Pol. pollution—Kitzingen.	0		January 1980	711	9	C09
282040/GE302—Pol. Pollution—Goeppingen.	0		February 1981	0	9	C00
282050/GE302—Pol. Pollution—Bad Kreuznach.	0	June 1980		0	9	C00
282060/GE302—Pol. Pollution—Giessen.	0	June 1980		0	9	C00
310000/GE302—Total Force ammo storage.	50, 781	Schedule follows		23, 560	9	C15
310010/GE302—Total Force ammo—Koeppern—Tree.	0		April 1980	0	9	C99
310011/GE302—Total Force ammo—Koeppern.	0		September 1981	0	9	C25
310020/GE302—Total Force ammo—Vielbrunn	0		October 1980	0	9	C16
310030/GE302—Total Force ammo—Crailsheim (to be constructed by NATO).	0			0	9	CAN
321000/GE302—Facilities mod. conn. barracks—Scawinft (indirect award, September 1979).	8, 726	April 1980		12, 834	6	DAC
334000/GE302—Facilities mod.—Gerzewski Karlsuh.	3, 443		July 1981	3, 450	9	C05
337000/GE302—Heavy equipment maint—Mannheim (indirect award, November 1978).	4, 050	October 1980		8, 919	6	DAC
350000/GE302—Facilities mod. ferris Barracks—Erlng	7, 731	August 1980		7, 941	6	D35
351000/GE302—Facilities mod.—Bindlach.	1, 782	April 1980		1, 806	6	D92
352010/GE302—Facilities mod.—Mannheim (cancelled due to scope problems, reprogramed to fiscal year 1981).	7, 000			0	8	CAN
362000/GE302—Facilities mod.—Grafennoehr (indirect award, September 1979).	4, 876	April 1980		4, 761	6	DAC
363010/GE302—Facilities mod.—Wildflecken.	1, 037	Scope problems reprogramed to fiscal year 1981.		0	8	CAN
378010/GE302—Facilities mod.—Smith Barracks—Baumhrd.	14, 000	Same as above		0	8	CAN
384010/GE302—Flight simulator—Manheim/Cole.	1, 739	do		0	8	CAN
540000/GE302—Upgrade clinics, various.	4, 379	April 1980		4, 801	6	DAC
542000/GE302—Pomcus storage and maintanance facilities.	56, 922	July 1980[1]		36, 922	6	D99
542010/GE302—Pomcus storage and maintenance facilities.	0	do.[1]		20, 000	6	D99
545000/GE302—Alter admin. area—Heidelberg.	558		October 1981	562	9	C11
Total	213, 875			200, 182		
Command total	213, 875			200, 182		

FISCAL YEAR 1980 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980

Command title, station name, key number, and, project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Code	Status
FORSCOM						
Fort Bragg: 362000/37033—Miscellaneous pollution abatment—WPC	$1, 250		June 1980	$913	6	DAC
Fort Campbell:						
249000/21128—Unaccom. office housing modification	1, 650	MAY 1980		1, 927	6	DAC
265000/21128—Flight simulator building.	2, 350		June 1981	2, 100	9	COO
292000/21128—Miscellaneous water pollution control—WPC	1, 400	July 1980		1, 400	6	DSO
295000/21138—Barracks and admin. and supply facility	12, 800	May 1980		12, 870	6	DAC
Total	18, 200			18, 297		

[1] Final award to complete project.

FISCAL YEAR 1980 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and, project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
FORSCOM—Continued						
Fort Drum: 023000/36216—Insulate and weatherstrip	690	April 1980		423	6	DAC
Fort Greely: 121000/02347—Ammo magazine improvement	820		November 1980	714	9	COO
Fort Hood:						
340020/48396—CIDC field operations building (award subject to HASC approval of cost increase).	0	April 1980		1,172	6	DAC
376000/47396—Hangar with shops	6,200		January 1981	5,782	9	COO
389000/48396—CO admin. and supply—1ST Cavalry Division	4,450	September 1980		4,511	6	D60
414000/48396—Miscellaneous water pollution—WPC	3,000	April 1980	June 1981	2,001	9	COO
		($882)	($2,118)			
Total	13,650			13,566		
Fort Hunter Liggett:						
018010/06398—Health clinic with beds	1,350	Authorized but not funded		0	7	AUT
063000/06398—CO admin. and supply buildings	1,550		February 1980	1,550	9	COO
Total	2,900			1,550		
Fort Lewis: 41300/53456—Vehicle maintenance pollution abatement—WPC.	7,400	April 1980		10,120	6	DAC
Fort George G. Meade: 200000/24571—Advance waste treatment—WPC.	18,500	September 1980		23,000	6	D55
Fort Ord:						
260000/06653—Intelligence support Co and crypto facilities.	880	May 1980		870	6	DAC
272000/06653—Barracks with dining facility.	16,500	September 1980		18,852	6	D60
Total	17,380			19,722		
Fort Polk:						
121000/22722—Land acquisition	460	February 1980 (no construction).		460	9	D00
164000/22722—Tactical equipment shops and facility.	13,600	June 1980		18,243	6	DAC
165000/22722—Miscellaneous water pollution abatement—WPC.	4,550	March 1980		5,919	6	D95
165010/22722—Miscellaneous water pollution abatement—WPC.	3,450	Project scope being reevaluated.		2,592	6	DAC
171000/22722—Airfield support facilities	4,750	July 1980		5,747	6	D90
Total	26,810			32,961		
Fort Richard:						
223000/02736—A/F fire and rescue station.	800	June 1980		1,083	6	D90
256000/02736—Barracks and dining facilities modernization.	4,450	April 1980		4,064	6	DAC
Total	5,250			5,147		
Fort Riley:						
154000/20756—Consolidated maintenance facility.	15,000	August 1980		17,830	6	D50
256000/20756—Tactical equipment shops and facility.	4,650	May 1980		5,817	6	D99
269000/20756—Washrack and vehicle maintenance—WPC.	8,700	May 1980 ($800) August 1980 ($7,900).		6,267	6	D50
Total	28,350			29,914		
Schofield Barracks: 098010/15776—Dental clinic.	2,750	Authorized but not funded		0	7	AUT
Fort Sheridan: 135000/17814—Storm/Sanitary sewer system—WPC.	1,200	June 1980		1,200	6	D90
Fort Stewart:						
133000/13834—Barracks with dining facility.	8,500	August 1980		8,668	6	D90
161010/13834—Co. admin. and supply buildings.	3,300	do		985	6	DAC
166000/13834—Tactical equipment shops and facility.	10,000	June 1980		12,917	6	D85

FISCAL YEAR 1980 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and, project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
FORSCOM—Continued						
168000/13834—Nondiv. DS maintenance shop.	9,900	September 1980.		11,268	6	D44
183000/13834—Central Heat/cooling plant addition.	3,800		May 1982	3,769	6	DAC
185000/13834—Vehicle maintenance pollution abatment—WPC.	4,400		October 1981	4,785	6	DAC
Total	39,900			42,392		
Yakima: 416000/53985—Maintenance hard-std. and other—WPC.	1,100	July 1980		1,580	9	C00
Total	1,100			1,580		
Command total	186,150			201,529		
TRADOC						
Fort Belvoir:						
439000/51062—Insulate buildings	720		December 1980	700	9	C00
440000/51062—Miscellaneous water pollution abatment—WPC.	1,700	August 1980		1,109	6	D6
Total	2,420			1,809		
Fort Benning:						
313010/13077—Reception station	0	Design deferred (user must provide criteria)		5,900	6	D25
337000/13077—Engineering tactical vehicle maintenance facility.	5,300		May 1981	5,553	6	DAC
340000/13077—Armor battalion tactical equipment shop.	3,300		do	3,407	9	C00
347000/13077—Boiler and heating controls.	1,350	June 1980		1,932	6	DAC
348000/13077—Solar pond for hot water	2,850	August 1980		3,309	6	D40
Total	12,800			20,101		
Fort Bliss:						
351000/48083—Hospital annex WBAMC	12,200		Sepetember 1982.	12,468	9	C00
362000/48083—Patriot training facility alterations.	3,800		October 1981	5,154	6	DAC
366000/48083—Land acquisition	14,000	February 1980.	No construction.	14,000	9	C00
Total	30,000			31,622		
Fort Eustis:						
308000/51281—Energy control system	2,850	May 1980		2,829	6	DAC
309000/51281—Modernize steam system	1,600		July 1981	1,654	9	C00
310000/51281—Insulate and window modernization.	760		June 1981	757	9	C00
313000/51281—Miscellaneous water pollution abatement—WPC	1,200		do	1,275	9	C00
Total	6,410			6,515		
Fort Benjamin Harrison:						
111000/18351—Insulate controls	1,650	Canceled (not cost or energy effective).		0	8	CAN
112000/18351—Emission control boiler plant—APC.	2,800	November 1980.		3,276	6	D90
Total	4,450			3,276		
Fort Knox:						
307000/21478—Armor crew training facility.	2,200	May 1980		2,300	6	D99
309000/21478—Insulate building	1,250	April 1980		1,233	6	DAC
311000/21478—Heat recovery incinerator	1,750	August 1980		1,750	6	D20
312000/21478—Tank training facility	13,065	do		13,065	6	D74
315000/21478—Miscellaneous water pollution abatement	4,550	September 1980		1,850	6	D21
Total	22,815			20,198		
Fort Leavenworth: 084000/20491—Administrative facilities modernization	540		January 13, 1981 (Awarded Jan. 8, 1980).	539	9	C00

FISCAL YEAR 1980 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and, project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
TRADOC—Continued						
Fort Lee:						
119000/51483—Small arms storage and repair shop	510		March 1981	496	6	DAC
148000/51484—Energy control system	1, 050	March 1980		1, 300	9	C00
151000/51484—Upgrade sanitary sewer —WPC	2, 400	July 1980		2, 400	6	D45
Total	3, 960			4, 196		
Fort Rucker:						
213000/01767—Upgrade stagefields	0	May 1980		3, 189	9	C00
215000/01767—Electronic equipment maintenance facility	880			601	9	C00
229000/01767—Renovate barracks	1, 200	July 1980		962	6	D10
Total	2, 080			4, 752		
Fort Story: 042000/51849—Miscellaneous water pollution abatment—WPC	2, 450	May 1980		2, 450	6	D90
Camp Perry: 001000/39684—Sewage treatment plant—WPC	1, 000	do		891	6	D95
Fort Leonard Wood:						
152000/29977—Medical supply warehouse ($2,477 authorized fiscal year 1970, $2,500 appropriated fiscal year 1980).	0	July 1980 (sec. 8A set aside)		2, 259	6	D97
181000/29977—Instruction building engineer equipment.	4, 150		August 1981	4, 066	9	C00
183000/29977—Solid waste incinerator (bids opened Mar. 19, 1980, cost variation required).	2, 200	May 1980		3, 410	6	DAC
Total	6, 350			9, 735		
Command total	95, 275			106, 084		
DARCOM						
Aberdeen Proving Ground:						
179000/24004—Human factors engineering lab.	5, 700		January 1982	3, 540	9	C00
243020/24004—Barracks and barracks modification ($6,200 appropriated fiscal year 1980; bids opened Mar. 11, 1980, cost variation required).	0	April 1980		5, 075	6	DAC
273000/24004—Explosion mechanics facility.	2, 700	June 1980		2, 700	6	D40
Total	8, 400			12, 424		
Anniston Army Depot:						
078000/01035—Combat vehicle rebuild building.	1, 400	April 1980		995	6	DAC
085000/01035—Emission control boiler plant—APC.	1, 900	August 1980		4, 048	6	D95
086000/01035—Miscellaneous industrial waste treatment—WPC	1, 550	September 1980		1, 158	6	D35
Total	4, 850			6, 201		
Badger AAP: 014000/55057—Insulate and Temperate control.	650	July 1980		650	6	D89
Corpus Christie Army Depot: 052000/48189—Advance power training test facility.	1, 560	July 1981		2, 000	6	D55
Crane AAA:						
001000/18172—Incinerator explosive waste—APC.	810	Canceled due to change in State standards.		0	8	CAN
003000/18172—Demil. waste treatment facility—APC.	960	September 1980.		960	2	D05
005000/18172—Industrial waste treatment med. cal.—WPC.	720	July 1980		720	2	D05
Total	2, 490			1, 680		
Detroit Arsenal: 045000/26221—Emission control boiler plant—APC.	4, 400	August 1980		6, 075	6	D90
Dugway Proving Ground: 220000/49191—insulate and weatherstrip.	520	July 1980		520	6	D85

FISCAL YEAR 1980 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
DARCOM—Continued						
Diamond Lab: 015000/24230—Land acquisition, Blossom Point.	2,800		January 1980	2,800	9	CAC
Indiana AAP: 013000/18393—Miscellaneous pollution abatement—WPC.	1,010	November 1980.		1,010	2	D20
Iowa AAP:						
027000/19422—Deactivation furnace—APC.	510	June 1980		533	6	D95
028000/19422—Insulate buildings	1,550	May 1980		1,799	6	D82
Total	2,060			2,332		
Joliet AAP:						
040000/17432—Industrial/sanitary waste LAP—WPC.	2,800	December 1980.		2,800	6	D25
046000/17432—Industrial/sanitary waste manufacturing—WPC.	3,000	do		3,000	6	D25
Total	5,800			5,800		
Kansas AAP: 014000/20450—Pink water treatment facility—WPC.	650		April 1981	729	6	DAC
Lake City: 012000/29496—Industrial waste facility—WPC.	3,800	May 1980		3,800	6	D85
Letterkenny Army Depot: 109000/42461—Ammo inspection and test facility.	1,200	November 1980		2,496	4	D30
Lexington Blue Grass Army Depot:						
077000/21506—Health clinic	870	June 1980		955	6	D75
078000/21506—Miscellaneous water pollution abatement—WPC.	720	May 1980		350	6	D95
Total	1,500			1,305		
McAlestair AP:						
001000/40548—Incinerator explosive waste—APC.	800	June 1980		1,199	6	D90
005000/40548—Incinerator contaminating waste—APC.	670	Deferred to 1981		0	8	CAN
Total	1,470			1,199		
Michigan AAP: 004000/26586—Emission control boiler plant—APC.	2,550	N/S—Plant subject to be turned over to State.		2,300	6	D90
Fort Monmouth: 138000/34558—Miscellaneous industrial waste treatment—WPC.	1,650	May 1980		579	6	D60
Newport AAP: 008000/18611—Chemical storage security upgrade.	1,550	September 1980		711	6	D40
Picatinny Arsenal:						
100000/34693—Ignition-combustion lab	1,200	April 1980		1,270	6	D95
111000/34693—Insulation—Storm windows.	1,550	do		1,678	6	D80
112000/34693—Radiological facility, addition.	1,850	do		1,500	6	D95
116010/34693—Insulation—Storm window—Weatherstripping.	1,800	Authorized but not funded		0	7	AUT
117000/34693—Energy control system	1,600	May 1980		1,600	6	D95
119000/34693—Miscellaneous water pollution abatement—WPC.	1,750	September 1980.		1,507	6	D10
Total	9,750			7,555		
Radford AAP: 063000/51722—Miscellaneous air pollution abatement—APC.	6,100	May 1980		6,100	6	DAC
Red River Army Depot: 084000/48733—Replace boilers.	8,600	September 1980.		8,637	6	D70
Redstone Arsenal:						
233000/01750—Barracks complex	7,200		January 1982	7,732	9	C00
235000/01750—Radar operation facility	0		March 1981	1,390	9	C00
Total	7,200			9,041		
Riverbank: 007000/06742—Industrial waste treatment plant—WPC.	1,100	July 1980		1,363	6	D90
Rock Island Arsenal: 077000/17755—Emission control boiler plant—APC.	5,900		June 1981	5,283	9	C00
Rocky Mountain Arsenal: 034000/08760—Liquid waste disposal—WPC.	6,500	August 1980		6,468	6	D60
Scranton AAP: 008000/42783—Forge and heat treatment shop—APC.	3,750	August 1980		3,530	6	D90

FISCAL YEAR 1980 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
FORSCOM—Continued						
Seneca Army Depot:						
060000/36794—Upgrade sewage treatment plants—WPC.	1,750	April 1980		2,101	6	DAC
063000/36794—Upgrade airfield	3,000			4,400	6	DAC
065000/36794—Ammo training facility	1,100			1,100	6	D90
066000/36794—Barracks without dining	2,500			2,800	6	D80
Total	8,350			10,401		
Sharpe Army Depot: 081000/06814—Storage modernization.	1,650	Authorized but not funded		0	7	AUT
Sierra Army Depot: 055000/06821—Roads	770		March 1981	853	9	C00
Tobyhan Army Depot:						
051000/42877—Eliminate cent. summer steam (project being reevaluated, may be canceled).	560			330	6	DAC
053000/42877—Alter electronics maintenance facility.	3,850	April 1980		4,600	6	DAC
058000/42877—Sewage treatment facility—WPC.	3,000	do		2,976	9	C00
060000/42877—Miscellaneous air pollution abatment—APC (may be canceled if boiler retest in May 1980 indicates compliance).	3,000	June 1980		2,850	6	D98
Total	10,410			10,756		
Tooele Army Depot: 080000/49878—Time clocks and controls.	1,050	May 1980		1,147	6	DAC
Volunteer AAP: 036000/47927—Line drainage ditches—WPC.	810	August 1981		863	6	D35
Watervliet Arsenal: 046000/36969—modify WPC facility—WPC.	1,300	September 1980.		2,282	6	D90
White Sands Missile Range:						
263000/35970—Land acquisition	2,100	February 1980—No construction.		2,100	9	C00
264000/35970—Fixed telescope sites	1,650		August 1981	1,392	9	C03
268000/35970—Temperature and altitude test facility.	2,000	September 1980.		1,859	6	D65
Total	5,750			5,351		
Yuma Proving Ground:						
113000/04991—Range access road improvement.	2,650	May 1980		3,563	6	D90
117000/04991—Dynamic environ test facility.	1,650	June 1980		1,866	6	D90
Total	4,300			5,429		
Command	132,200			139,670		
USACC						
Fort Huachhuca:						
150000/04289—Fight control tower	580	May 1980		846	6	DAC
171000/04289—Showerheads solar temperature modification.	570	April 1980		151	6	DAC
Total	1,150			997		
Fort Ritchie:						
078000/24745—Upgrade air-conditioning.	3,800	September 1980		3,800	6	D35
082000/24745—Sewage treatment plant—Site R—WPC.	1,500	do		980	6	D35
085000/24745—Sewage treatment plant—WPC.	2,550	May 1980		2,562	6	D95
Total	7,850			7,342		
Command total	9,000			8,339		
USMA						
USMA:						
174000/36903—Athletic facility	12,200	May 1980		12,700	6	DAC
180000/36903—Improve sewer system—WPC.	1,150	September 1980.		1,135	6	D40
Command total	13,350			13,835		

FISCAL YEAR 1978 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
HSC						
Walter Reed: 099000/11933—Improve research facilities.	650			633	9	C00
MTMC						
MOT Bayonne: 048000/34055—Ship waste disposal system—WPC.	920		March 1981	660	9	C00
Oakland: 080000/06626—Ship sewerage facility—WPC.	1,100		February 1981	950	9	C00
Sunny Point AT:						
036000/37840—Container restuffing facility (authorized fiscal year 1979 at $1,250 and funded in fiscal year 1980).	0	April 1980		1,602	6	DAC
038000/37840—Container hold area and ruad.	4,700	July 1980		7,039	6	D70
039000/37840—Transfer area expansion and crane.	5,400		June 1981	2,959	9	C00
040000/37840—Interchange yard expansion.	760		December 1980	742	9	C00
041000/37840—South wharf removation	11,200		May 1981	8,799	9	C00
042000/37840—Container suspect area	580		December 1980	600	9	C00
043000/37840—Expansion rail holding area.	4,900	June 1980		3,724	6	DAC
044000/37840—Carbo transfer area	880		December 1980	942	9	C00
045000/37840—Rail car and vehicle cleaning area.	2,200		January 1981	1,541	9	C00
047000/37840—Empty truck paring area	670		September 1980	819	9	C00
Total	31,290			28,767		
Command total	33,310			30,377		
USARJ						
Okinawa: 711000/YQ641—Replace pol. tanks, Kuwae.	2,700	May 1980		3,235	6	D85
BMDSC						
Kwajalein:						
215000/TQ496—Resize and modernize range facilities.	2,900	April 1980		2,878	9	C00
226000/TQ496—Payment for use of land	500	February 1980	No construction	500	9	C00
Command total	2,900			3,378		
FORS–OS						
Panama:						
167000/PQ665—Test facilities	773		March 1982	773	6	DAC
168000/PQ665—Facilities alteration 193d Infantry Brigade.	12,444		do	9,193	6	DAC
169000/PQ665—Facilities alteration 210th Aviation Battalion.	9,411		do	10,207	6	DAC
170000/PQ665—Facilities alteration 470th M I.	2,772		do	2,833	6	DAC
172000/PQ665—Renovate medical wharehouse.	660	May 1980		778	6	DAC
Command total	26,060			23,784		
USAREUR						
Germany:						
203000/GE302—Dental clinic—Heidelberg.	2,100	May 1981		1,443	2	D30
256000/GE302—Expand satellite communications—Landstl.	1,400	August 1980		1,642	6	D97
308000/GE302—Defense sattelite communications system—Augsburg.	1,100	September		1,228	6	D99
340000/GE302—Ammo inventory building—Miesau.	680	March 1980		498	6	D97
346000/GE302—Electrical distribution systems—Honenfels.	1,700	June 1980		1,198	6	D90
348000/GE302—Gymnasium and facilities—Grafenwhr.	3,050	May 1980		3,001	6	DAC
357000/GE302—Ordnance maintenance shop—Bremerhaven.	1,050	April 1980		1,036	6	D90

FISCAL YEAR 1978 MCA CONSTRUCTION FUNDS STATUS, FEB. 21, 1980—Continued

Command title, station name, key number, and project description	Authorized amount (thousands)	Estimated award date	Construction completion date	CWE (thousands)	Design construction	
					Code	Status
USAREUR—Continued						
375000/GE302—Sanitary facilities Karlshire.	620	May 1980		1, 348	6	D35
389000/GE302—Operations building with maintenance facility—Fuld.	1, 350	do		1, 536	6	D99
390000/GE302—Tank target training system—Various.	1, 700	June 1980		1, 899	6	D97
391010/GE302—Simul city MOBA—Hoenfels.	3, 100	Authorized but not funded		0	7	AUT
397000/GE302—Gymnasium addition—Wertheim.	1, 150	July 1980		931	6	D91
399000/GE302—Maintenance facilities modifications—Fulda.	2, 550	August 1980		1, 932	6	D49
400000/GE302—Maintenance facilities modifications—Gelnhausen.	3, 900	July 1980		3, 586	6	D62
401000/GE302—Maintenance facilities modifications—Erlangen.	10, 600	March 1980		11, 433	6	DAC
402000/GE302—Hangar and modifications mnt—Mannheim.	12, 800	January 1981		12, 325	6	D35
413000/GE302—Moving target simulator—Garl/Baum.	1, 150	September 1980		1, 150	6	D30
489000/GE302—Pollution abatement—Grafenwhoehr—WPC.	1, 900	July 1980		1, 156	6	D35
515000/GE302—Automate heat system—Various.	2, 400	August 1980		1, 951	6	D35
531000/GE302—Automate heat system—Kaiserhauten.	1, 350	do		1, 319	6	D35
533000/GE302—Barracks with dining—Fulda.	3, 150	May 1980		3, 381	6	D99
541000/GE302—Upgrade clinics, various	3, 650	October 1980		2, 290	6	D90
544000/GE302—Relocate barracks, 32d AADCOM.	5, 900	July 1980		6, 601	6	D97
552000/GE302—Automate heat system—Frankfurt.	5, 500	September 1980		5, 000	6	D33
553000/GE302—Automate heat system—Augsburg.	4, 800	August 1980		4, 800	6	D35
560000/GE302—Tactical fire dir system—Vilseck.	1, 900	Authorized but not funded		0	7	AUT
569000/GE302—Hdstd. tactical shop—Buedingen.	940	May 1980		921	6	D90
570000/GE302—Barracks—Wildflecken	4, 850	September 1980		5, 169	6	D10
649000/GE302—Barracks w/o dining—Kitzingen.	5, 400	May 1980		6, 566	6	D97
676000/GE302—Automate heat system—Bamberg.	630	December 1980		630	6	D35
704000/GE302—Facilities—XM1—Vilseck	5, 800	April 1980		5, 109	6	D90
742000/GE302—Pol. pollution abatement—Mainz—WPC.	1, 100	Authorized but not funded		0	7	AUT
744000/GE302—Pol. Abatement—Balm-Holder—WPC.	2, 000	do		0	7	AUT
745000/GE302—Pol. Abatement PH 2—Balmholder—WPC.	820	do		0	7	AUT
746000/GE302—Pol Abatement—Vilseck—WPC.	1, 050	July 1980		1, 228	6	D35
747000/GE302—Hdstd. tactical shop—Kirchgoens.	1, 400	June 1980		1, 498	6	D35
750000/GE302—Barracks—Schweinfurt	6, 000	September 1980		6, 554	6	D35
751000/GE302—Barracks—Kitzingen	4, 450	do		4, 773	6	D35
752000/GE302—Barracks—Friedberg	1, 950	Authorized but not funded		0	7	AUT
753000/GE302—Barracks—Hanau	4, 250	do		0	7	AUT
754010/GE302—Barracks—Nuernberg	7, 300	do		0	7	AUT
Total	128, 490	33, 233, 362		105, 132		
Command total	128, 490			105, 132		
ASA—0/S						
Location 280:						
002000/ZZ116—Air condition upgrade—Berlin.	1, 441	September 1980		1, 067	6	D90
020000/ZZ116—Defense satellite communications system—Berlin.	1, 359	do		1, 574	6	DAC
Command total	2, 800			2, 641		

INFORMATION PAPER

Subject: Current Costs for MCA Projects in Europe. MAY 1, 1980.

FACTS: The attached listing reflects the projects in Europe, their cost as submitted to the Congress with the FY 81 MCA budget request, and their current cost converted to reflect the current rate of exchange of DM 1.78 per US dollar.

Enclosure.

[Dollar amounts in thousands]

Location: Project No. and description		Cat. CD	Congress request [1]	Current cost [2]
Germany:				
005000	Warehouse rehab, Augsburg	441	$350	$374
109000	Phys fit ctr, Hohenfels	740	3,250	3,469
268010	Oper bldg A/C mod, Augsburg	141	2,250	2,402
273000	Tact equip shop, Eschborn	214	2,100	2,242
277000	Basic load site, Hanau	422	2,300	2,455
278000	Pave roads, Vilseck-Asp	851	1,700	1,815
279000	Pave roads, Hohenfels	851	770	822
338000	Ord fld maint shop, Mannheim	214	11,600	12,382
352000	Maint facs mod, Mannheim	214	7,000	7,472
360000	Tact equip shops, Grafenwhr	214	4,300	4,590
363000	Tact equip shop, Wildflecke	214	3,250	3,469
364000	Engine test cells, Ksln dpt	214	270	288
378000	Maint facs mod, Smith Bks	214	14,000	14,944
384000	Flt simulator Mannheim/Cole	171	4,110	4,387
385000	Ammunition upload facs	422	13,800	14,730
391000	Simul city mout, Hohenfels	179	3,750	4,003
396000	Phys fit ctr, Aschafnbrg	740	2,000	2,135
398000	Maint fac mod, Bad-Hersfld	214	3,650	3,896
403000	Commissary whse Ansbach	740	1,350	1,441
406000	Indoor Range, Boeblingen	171	950	1,014
410000	Battalion classrm, Bamberg	171	950	1,014
417000	Physical fit ctr, Gelnhause	740	1,950	2,081
420000	Maint fac mod, Herzo Base	214	6,000	6,404
421000	Tact equip shops, Mainz	214	5,600	5,978
423000	Maint facs mod, Hohenfels	214	3,350	3,576
424000	Maint facs mod, Kaiseltrn	214	5,700	6,084
432000	Alt phys fit ctr, Fischbach	740	760	850
435000	Physical fit ctr, Mannheim	740	2,850	3,042
454000	Washrack, Erlangen	214	800	854
476000	Motor shop mod, Boelingen	214	6,400	6,831
477000	Tact equip shop, Giessen	214	4,400	4,697
482000	Maint facs mod, Amberg	214	4,300	4,590
564000	Maint facs mod, Wildflecken	214	4,800	5,124
579000	Barracks facilities, vars	721	13,600	14,517
588000	Maint facs mod, Karlsruhe	214	5,800	6,191
594000	Subcal tank rg, Bad-Hers	179	1,000	1,067
632000	Washrack, Aschafenberg-WPC	841	1,050	1,121
644000	Health clinic, Goeppingen	550	2,100	2,242
645000	Health/dental cl, Mannheim	550	3,500	3,736
647000	Health/dental clin, Amberg	550	2,850	3,042
664000	Temp heat recovery Baumhrd	800	2,300	2,455
665000	Temp heat recovery, Hanau	800	2,270	2,423
666000	Temp heat recovery, Giessen	800	2,500	2,669
669000	Temp heat recovery, Gulda	800	380	406
670000	Temp heat recovery, Bad-Kren	800	410	438
673000	Health/dental clinic, Hana	550	8,400	8,966
685000	Major trng area, Ug-Grafnwr	179	1,200	1,281
687000	Hardstand and fac, Achaffbrg	452	520	555
691000	Satellite ctrl fac, Landsth	131	2,100	2,242
705000	Energy mont/cont, Karlsruh	800	840	897
709000	Heat plt consol, Fuerth	800	630	67
737000	Child care ctr, Pirmasens	740	1,500	1,602
754000	Barracks, Nuernberg	721	9,800	10,461
755000	Barracks, Garlstedt	721	5,000	5,331
757000	Training area improvements	179	4,650	4,967
760000	Impr pol hndlg fac, Fulda	411	1,500	1,604
767000	Tact equip shop, Kitz-Harvy	214	1,400	1,491
768000	Tact equip shop, Kitzingen	214	3,000	3,204
773000	Upgrd fire sta, Heidlberg	730	690	732
778000	Fire/safe def, Garmisch	730	140	147
781000	Fire prot/IDA sys, Ksl-Rob	730	460	499
782000	Fire/safe def, Garmisch	730	170	181
784000	Banking fac, Frankfurt	740	400	421
787000	Comm pwr torng, Hohenfels	812	310	337
790000	Auto self/help garage, Krch	740	3,800	4,051
791000	Upgrd border post facs, Rom	851	330	356
792000	Upgrd TOW range, Hofenfels	179	340	362
793000	Barracks, Kitzingen	721	5,400	5,763
795000	Ground poll, Fuerth	452	1,360	1,454
796000	Barracks w/facs, Vilseck	721	5,400	5,762

[Dollar amounts in thousands]

Location: Project No. and description		Cat. CD	Congress request[1]	Current cost[2]
798000	Barracks w/facs, Bamberg	721	15,000	16,101
799000	Hardstand/stge fac, Baamber	452	800	854
801000	Health clinic, Dexheim	550	1,800	1,921
802000	Alt dental cl, Nuernberg	540	1,350	1,441
803000	Health/dental cl, Bad-Hersf	550	1,850	1,975
814000	Hardstand, Hanau	452	240	256
919000	Bn hdqts and clasrms, Vilseck	171	1,050	1,121
920000	Vehicle maint shop, Vilseck	214	2,600	2,775
921000	Ammunition igloos, Vilseck	421	1,800	1,921
922000	Phys fit ctr, Boeblingen	740	3,000	3,202
923000	Bn hdqtrs and clasrms, Bamberg	171	750	801
924000	Vehicle maint shop, Bamberg	214	6,500	6,938
925000	Dining facility, Bamberg	722	2,250	2,402
926000	Heating plant, Bamberg	821	1,500	1,601
928000	Bn hqs/clsrms, Kitzingen	610	1,850	1,975
Total, Germany			270,050	288,926
Italy:				
133000	Upgrd transormer sta, Vicz	812	480	512
Turkey:				
004000	Barracks	721	2,800	2,989
005000	Unacom officers housing	724	580	619
006000	Physical fitness center	740	1,400	1,494
007000	Operational facilities	171	780	833
008000	Classroom facilities	171	740	790
Total, Turkey			6,300	
Total, Command USAREUR			276,830	295,533

[1] The congressional request column was calculated at a rate of 1.9 deutsche marks per U.S. dollar.
[2] The current cost column was calculated at a rate of 1.78 deutsche marks per U.S. dollar.

CONSTRUCTION BACKLOG AND EXPENDITURES

Question. Would you discuss your construction backlog over time? How has it varied, why? (For the record, provide a chart showing the construction backlog in current dollars and in constant fiscal year 1981 dollars using the ENR Construction Cost Index to normalize costs. Show these costs since fiscal year 1964.)

Answer. The construction backlog for Army since fiscal year 1975 is as follows:

BACKLOG

[In billions of dollars]

	Amount	Constant dollars
Program year:		
1975	$7.5	$12.4
1976	8.1	12.3
1977	7.7	10.7
1978	7.7	9.9
1979	11.7	13.9
1980	13.1	14.3
1981	15.2	15.2

The figures presented indicate the backlog was consistent in constant dollars during the 1974–1976 period, took a dip down during 1977 and 1978 and has grown since the 1979 period. The areas where the largest growth have occurred are in the operation and training, maintenance and production, troop housing and community facilities, and in the utility, energy conservation and pollution abatement areas. Most of this growth can be related to increased requirements for improved standards for soldiers and their families, emphasis and identification of energy conservation requirements, pollution abatement legal requirements, and increased emphasis on Army readiness.

With an estimated backlog of this magnitude, it is difficult to register any significant annual reduction in the overall total, because newly identified requirements added to the program and rapidly increasing construction costs combine to nearly offset annual construction efforts. The Army is striving, however, to ensure that the backlog only includes hard and valid requirements which support the Army's mission and is currently purging items that realistically would probably never be built.

Question. Would you discuss the history of military construction expenditures in the Army? (Provide for the record, a chart showing the history of construction expenditures or authorizations. Show the history since fiscal year 1964 in current dollars and constant dollars using the ENR Construction Cost Index to normalize costs. Identify the Vietnam War "hump" and any other anomolies that may exist.)

Answer. Military construction appropriations for the Army are as follows:

MILITARY CONSTRUCTION, ARMY

[In millions of dollars]

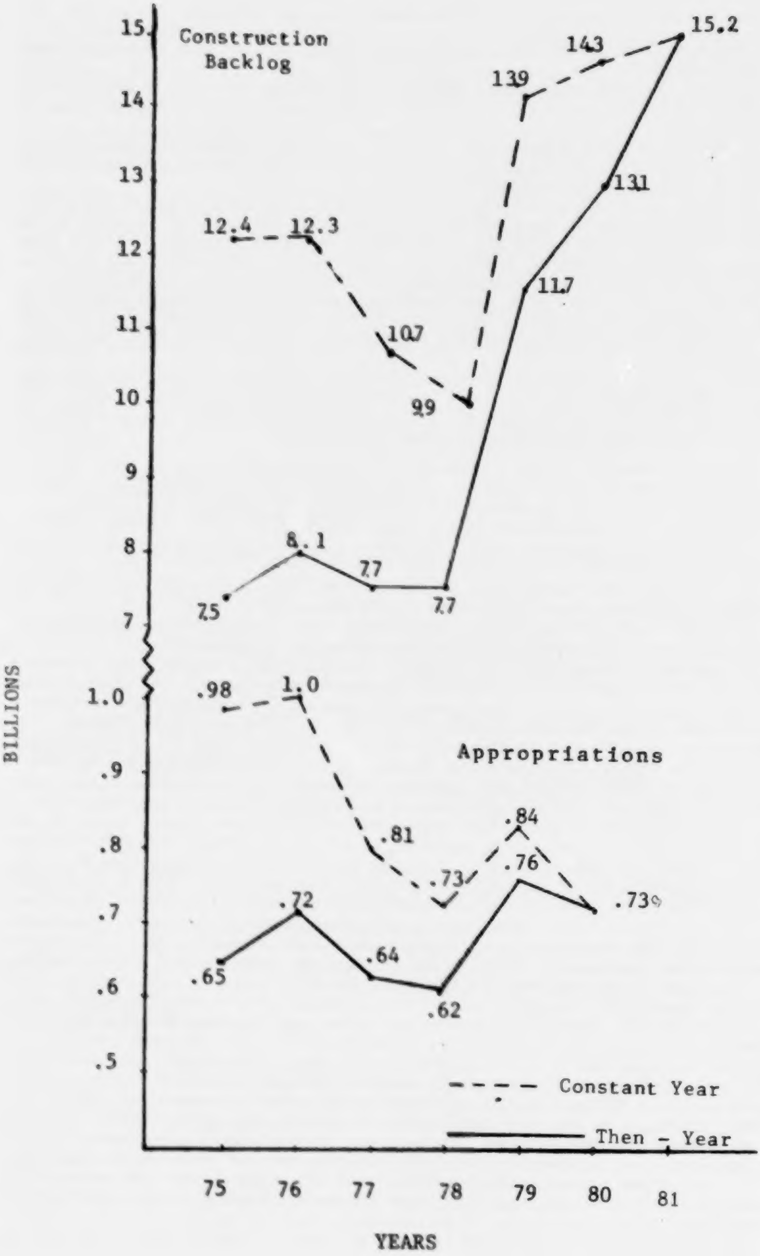
Year	Expenditures	Constant	Year	Expenditures	Constant
1964	203	639	1973	588	1,001
1965	365	1,126	1974	706	1,169
1966	1,096	3,231	1975	650	982
1967	495	1,437	1976	721	1,002
1968	499	1,368	1977	635	808
1969	501	1,230	1978	617	727
1970	374	891	1979	765	835
1971	564	1,192	1980	726	726
1972	462	864			

The large appropriations indicated in Constant dollars during the 1965–1971 period included appropriations for Vietnam construction and other related construction. The highest appropriation for military construction, excluding Vietnam, in constant dollars occurred in 1974 and has since that time increased to a constant dollar level in the approximate $700 million level. This has occurred at the same time that pollution abatement and energy conservation programs have received increasing amounts of funding, thus there have been fewer funds for the improvement and modernization of the Army's real property inventory.

Question. Provide a graph showing construction backlog and construction expenditures, both in constant and then year dollars, identifying and discussing any anomalies.

Answer. The requested graph follows. Most of the backlog from 1978 can be related to increased requirements for improved standards for soldiers and their families, emphasis and identification of energy conservation requirements, pollution abatement requirements, and increased emphasis on Army readiness.

The rapid growth in construction backlog has occurred at the same time that pollution abatement and energy conservation programs have received increasing amounts of funding thereby having less funds for reducing the Army's backlog. Over half of the Army's backlog is for the improvement and modernization of the Army's real property inventory.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SOLAR

Question. What is your opinion of section 804 of last year's bill as it has been implemented?

Answer. We find no technical difficulty with section 804 as it is being implemented. However, we do feel changes could be made to make better use of resources.

Presently we spend resources on each MCA project to determine cost effectiveness. More projects are found not cost effective to a solar energy application than those projects found to be cost effective.

We have many different types of facilities located in many areas of the nation each receiving varying amounts of solar insolation. We feel that we could better use solar energy funds through a selective application program. If funds were made available, we would demonstrate solar energy applications only in those facilities with daily energy requirements that are in areas of good solar insolation. In addition, we would install instrument packages to monitor these installations for a minimum of one year to determine performance and actual energy savings.

Question. Provide for the record a copy of your instructions to field implementing section 804.

Answer. Our instructions, Engineer Technical Letter 1110-3-302, dated March 14, 1979, implementing Section 804 for MILCON, 1979 is attached. Upon enactment of MILCON, 1980, Engineer Technical Letter 1110-3-302 was modified via DAEN-MPE letter of December 28, 1979, copy attached.

DEPARTMENT OF THE ARMY,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, D.C., March 14, 1979.

ENGINEERING AND DESIGN—EVALUATION OF SOLAR ENERGY

1. *Purpose.*—This letter provides guidance for solar energy application for all MCA projects that start design on or after December 7, 1978.

2. *Applicability.*—This letter applies to all OCE elements and field operating agencies having Army military construction design responsibility.

3. *Background.*—a. With the pressure of a continuing requirement to reduce non-renewable fuel consumption, it is necessary to investigate the potential use of solar energy for MCA facilities requiring heating, air conditioning, or domestic hot water. Executive Order 12003, dated July 20, 1977, established energy conservation goals for new and existing Federal facilities. Title III of Public Law 94-385, the "Energy Conservation Standards for New Buildings Act of 1976," redirects Federal policies and practices to assure that reasonable energy conservation features will be incorporated in Federally financed new buildings.

b. The Military Construction Authorization Act, 1979, Public Law 95-356 in Section 804 requires that 25 percent, based on the estimated dollar value of the construction cost, of all new facilities except family housing (family housing requirement is 100 percent) that are placed under design shall include solar energy systems to the extent that engineering analyses demonstrates them cost effective. The law makes this requirement effective ninety days after enactment of the act. The law was enacted September 8, 1978; therefore, all design starts on or after December 7, 1978 are subject to these requirements. DOD requires a summary of the engineering analysis be furnished prior to initiating the final design. Essentially, the act requires than an engineering/economic analysis must be made as part of the design process for all military projects. Those projects for which solar energy applications are determined to be cost effective are to be designed as solar energy projects. For the purpose of the engineering/economic analysis, a solar energy system will be considered cost effective if the original investment cost differential can be recovered over the "expected" life of the facility. Further, the act stated that only the initial cost of the systems is to be considered in determining cost effectiveness; hence, if the 25 year energy (operating costs) savings, exclusive of any maintenance and replacement costs, exceed the original investment cost differential, the original cost differential is to be considered recovered and the solar energy application becomes cost effective.

c. The need to conserve non-renewable/fossil fuel supplies is evident. The need to use/demonstrate solar energy systems is complex. Primarily, solar energy systems must be used to conserve fossil fuel supplies; but it is also an important goal to advance the state-of-the-art. Industry must be assisted in establishing production of standardized solar components and subsystems as catalog products with warranted outputs and efficiencies. However, only some of the solar energy system components need advance state-of-the-art development. Solar energy systems include much more than solar collectors, piping, storage, and heat exchangers. Military facilities designs should take advantage of passive solar design techniques (building orientation, amount and location of windows, et cetera) and designers should consider future installation of solar systems when they become more cost effective by carefully designing new facilities (roof slopes, HVAC systems, et cetera) so that they lend themselves to solar retrofit.

4. *Guidance.*—a. The inclosed Engineering Instructions require the preparation of engineering/economic analysis for solar energy application for Army buildings. The engineering/economic analysis will be prepared as part of and along with the concept design for the project. As a result of the engineering/economic analysis, the project Code "B" ENG Form 3086 cost estimate will be modified.

b. The extent of the required engineering/economic analysis for each project will require judgment as to the potential of solar energy utilization. Hence, each analysis must be carefully managed to assure that the level of investment in the analysis itself is commensurate with the benefits anticipated and that unnecessary evaluation efforts will not be made on obviously ineligible projects.

c. The final design of solar projects will implement the recommendations of the engineering/economic analysis as approved by the appropriate CE Division Office.

5. *Action To Be Taken.*—The application of solar energy to Army facilities will be in accordance with the inclosed Engineering Instructions. A statement regarding the technical and economic feasibility of the developing technology as it applies to each project will be reported as an additive at the time the Budget Control Data (ENG Form 3086) are submitted. Each construction project incorporating a solar energy system will clearly show the type of functional purpose of the system (domestic hot water; space heating; domestic hot water and space heating; and domestic hot water, space heating and space cooling; and the cost including installation. If more than one system is involved in a single project, the type and the cost of each shall be displayed separately. This guidance will be applied to all project designs.

6. *Implementation.*—This letter will have routine applications as defined in paragraphs 6c, ER 1110-345-100.

For the Chief of engineers:

LEE S. GARRETT,
Chief, Engineering Division
Military Programs.

Enclosure.

ENGINEERING INSTRUCTIONS FOR SOLAR ENERGY APPLICATION FOR ARMY BUILDINGS TO PROVIDE DOMESTIC WATER HEATING, SPACE HEATING AND SPACE COOLING

1. General Engineering/Economic Analysis Guidance.

a. These engineering instructions for solar energy application requires the preparation of documentation in the form of an engineering/economic analysis to determine the extent that solar energy systems are cost effective for each of the following systems:

(1) Domestic Water Heating.
(2) Space Heating.
(3) Domestic Water Heating and Space Heating.
(4) Domestic Water Heating, Space Heating and Space Cooling.

b. It is important that the preparation of the engineering/economic analysis does not delay the design process, and that the analysis be completed early enough to influence budget data submission for final DD Form 1391 updating. Candidate systems will be evaluated on a life cycle cost basis using the life cycle cost procedures contained in the DAEN-MPE-E Engineering Instructions for Preparation of Feasibility Studies for Total Energy, Selective Energy, and Heat Pump Systems except as modified by paragraph 1d hereinafter and by use of the energy cost escalation rates is shown on the table below:

[In percent]

	Annual escalation rates [1]		Differential escalation rates [2]
	Fiscal year 1979–80	Fiscal year 1981–83	
Energy source:			
Fuel oil	16	14	8
Natural gas and LPG	15	14	8
Electricity	16	13	7

[1] Apply to today's initial cost to obtain program year cost.
[2] Use for life cycle cost studies.

The solar energy system(s) recommended for final design will be based on the results of the engineering/economic analysis of various suitable solar energy utilization systems. Reasons for rejecting other systems from further consideration will be noted in the analysis. This will serve to document that suitable engineering/economic analyses have been made, and to indicate clearly the methods followed and the basis for the decisions made regarding the solar energy systems. The solar engineering/economic analysis will be approved by the CE Division Office. Immediately after CE division approval of a projects engineering/economic analysis, only only through July 31, 1979, a summary of the engineering/economic analysis will be forwarded to HQDA (DAEN–MPE–E) Washington, D.C. 20314 for transmittal to OSD (MRA&L). Final design will not be started until this summary document of the approved analysis has been furnished for OSD (MRA&L). This summary document for each solar energy project will include a brief description of systems considered, a brief pro/con discussion leading to the recommended system(s), a Code "B" ENG Form 3086 cost estimate, payback period, and the life cycle cost of the conventional/solar (solar cost as modified by these instructions) system(s). Starting August 1, 1979 final design will proceed (if previously authorized) immediately after CE Division Office approval of the solar engineering/economic analysis; however, OSD (MRA&L) has requested that the summary of the engineering/economic analysis continue to be submitted but are to be held in file at DAEN–MPE–E.

c. These engineering instructions are in addition to instructions issued for a particular facility for the development of conventional heating, ventilating, air conditioning and plumbing systems in accordance with TM 5–810–1, TM 5–810–5 and DOD 4270.1–M. The applicable portions of U.S. Department of Housing and Urban Development (HUD) Intermediate Minimum Property Standards Supplement for Solar Heating and Domestic Hot Water Systems (1977 Edition) shall be used as a guide in making the required engineering analysis. Site specific solar radiation and other weather data of DOD's authorized weather service (see page iv of TM 5–785, Engineering Weather Data, July 1, 1978) shall be used in making the required engineering/economic analysis. Since solar energy is intermittent in its availability, design of solar systems for Army facilities have in the past been provided with conventional systems sized to carry the entire building energy requirements. It is not prudent at this time to reduce this requirement for housing and medical facilities. However, for other facilities the capacity of the conventional system(s) equipment(s) may be reduced under the following guidance:

(1) Where consideration of the solar energy input will allow a reduction in the rated load sizes of major space heating or space cooling system components in the conventional system (and significantly reduced construction costs).

(2) Where such a reduction in size will permit maintenance of interior temperatures precluding any damage to the facility or extended periods of discomfort to occupants during periods of solar system outage. Minimum interior space temperatures should never be below 45° F for unoccupied spaces (in heated buildings) or 55° F for occupied spaces nor should maximum temperatures be permitted above 85° F for occupied spaces (in cooled buildings). The most economical alternative for the conventional system(s) should be selected in accordance with normal procedures as set forth in AR 11–28 and as supplemented by ETL 1110–3–296.

d. The recommended solar energy system must be cost effective. For permanent type facilities in the MCA program an "economic life" of 25 years is ordinarily assumed for investment (life cycle cost) type calculations. Accordingly for solar energy economic calculations, the life expectancy or "expected life" of facilities used in determining cost effectiveness shall be 25 years. The following procedures should be followed to determine the cost effectiveness of the solar energy system(s) alternatives:

(1) The most economical conventional system(s) that are compatible to solar energy application(s) shall be selected in accordance with normal procedures considering life cycle costs.

(2) Solar energy system(s) alternatives that are compatible to the most economical conventional system(s) shall then be identified and evaluated using the 25-year "expected life" of the facility. The recommended solar energy/conventional system(s) wil be the one(s) with the lowest life cycle cost if the original investment cost differential is recovered. If the 25-year energy (operating cost) savings, exclusive of any maintenance and replacement costs, exceed the original investment cost differential, the original cost differential is to be considered recovered and the solar energy application becomes cost effective.

(3) Congress has expressed (In Senate Report No. 95–847, "Military Construction Authorization fiscal year 1979") the concern that ". . . there appears to be a reluctance by the DOD to incorporate solar systems on a large scale because they are not 'cost effective' . . ." In order to reconcile this concern, calculations shall be made to determine the point in time when the original solar energy investment cost differential is recovered. The point in time when the investment cost differential is recovered is called the payback period. The payback period is the amount of time, rounding off to years, that it takes to offset the investment cost differential with escalated annual energy savings. For those analyses where there is only one energy source escalation rate and this rate does not change during the study period the following payback year formula (assuming end of year payment) may be utilized:

$$p=\frac{\ln\left(1+\frac{C}{s}\left(\frac{r}{1+r}\right)\right)}{\ln\,(1+r)} \qquad \text{eq. 1}$$

Where

C=Investment cost differential

s=Annual energy savings

r=Differential escalation rate of the energy source under consideration

p=Payback year

Equation 1 was developed by summing the escalated annual energy savings as follows:

$$C=s(l+r)+s(l+r)^2+s(l+r)^3+\text{--------------------}s(l+r)=P$$

The above equation is geometrical series whose sum is

$$\frac{C}{s}=\frac{(1+r)^p-1}{1-\frac{1}{1+r}}$$

From the above, equation 1 was derived by simplifying and solving for p.

The calculated payback period shall be highlighted in the engineering/economic analysis and in the project funding submission.

(4) If the original investment cost is not recovered using an "expected life" of 25 years or less, than the solar energy applicaion(s) under consideration shall be considered as not to be cost effective. In these cases, final design (when authorized) will proceed using conventional system(s) exclusively.

2. Solar Engineering Guidance.

a. Special attention will be directed to the architect-engineer firm's capabilities and expertise in the field of solar energy application. If such expertise does not exist, outside consultants will be retained by the architect-engineer firms.

b. Project specifications will be written to permit all types and configurations of the state-of-the-art solar collectors that can qualify for the temperature of the transfer fluid required.

c. Adequate freeze protection during winter operation will be provided by design. Adequate over-temperature protection will be provided by design to preclude damage to solar collectors resulting from no load or stagnation temperature.

d. The circulation systems, in addition to operational controls, will be provided with monitoring devices such as recordng flow meters, pressure gages and thermometers, watthour meters, and totalizing pyranometer to permit visual monitoring of system performance. Based on the experience of the solar consultants and as approved by the District, other useful monitoring devices may be added.

e. The solar systems will be designed for proper interface with the conventional systems and the solar/conventional systems will be provided with operational controls and instrumentation for automatic changeover from one to the other.

f. the solar/conventional system will be designed to use solar energy to the maximum extent with the supplementing conventional system used to the minimum extent. The controls for the solar/conventional system will be the most simple appropriate to the type of functional purpose of the system. Special attention to the following items should be given by the designer in the review of the project design:

(1) Check that control methodology matches the desired modes of operation.

(2) Verify that collector loop controls recognize solar input, collector temperature, and storage temperature.

(3) Verify that controls allow the collector loop and the utilization loop to operate independently.

(4) Check that control sequences are reversible and will always revert to the most economical mode.

(5) Check that controls are as simple as possible within the system requirements. Complex controls increase the frequency of breakdowns.

(6) Check that all controls fail in the safe position.

g. The project drawings and specifications will clearly define in detail how the solar system is to operate, including control logic, all modes of operation, and what quantities of energy it is designed to produce. The Construction Contractor will be required to develop detailed operation and maintenance procedures for the solar/conventional system, based on the plans and specifications, in conjunction with data on the installed equipment, controls, etc. The design A/E contract will require that the Construction Contractor's detailed operation and maintenance procedures be reviewed to assure that the intent of plans and specifications are met. After approval by the Contracting Officer, the final operating and maintenance procedures will be submitted by the Contractor to the Contracing Officer, compiled as an Operating and Maintenance Manual, not later than 30 days after beneficial occupancy.

h. The design and construction contracts will contain requirements for post-construction data collection and evaluation of the performance of the solar/conventional system(s). The solar/conventional system(s) shall be monitored for a period of time not to exceed one calendar month in order to evaluate the solar system. Monitoring shall include visual observations of the components in the system under each mode of operation, recording of data from devices specified above, and tests as necessary to evaluate the performance of the solar/conventional system. A written report will be prepared detailing the actions taken and the results of the evaluation. The District will determine who will do the monitoring, i.e., (1) the design A/) firm or (2) the Construction Contractor. Five copies of the written report shall be furnished to the Contracting Officer within 60 days after beneficial occupancy. The report will evaluate the adequacy of the system and operating procedures under actual operating conditions and shall include, if necessary, recommendations to improve system operation and/or efficiency.

3. Solar Project Bid Document Guidance.

a. When preparing the bidding documents for those facilities where solar energy system(s) have been determined by engineering/economic analysis to be cost effective the following bid schedule will be developed.

(1) Base bid.—The facility with complete conventional domestic hot water, heating and/or cooling system(s) designed to accept the solar energy system(s) described in the additive bid package at a later date with a minimum impact on the then existing structure including existing system(s). This means for example, such item as roof mounting pads, piping stubouts, pipe chases and equipment room space for electrical panels, chillers, etc., are to be included in this original construction package.

(2) Additive bid.—The facility with complete conventional domestic hot water, heating and/or cooling system(s) as described in the above base bid with the solar energy system(s) determined by engineering/economic analysis to be cost effective. Award of this additive item will be subject to the reasonableness/acceptability of the bid and to the availability of funds.

4. Solar Energy System Design Guidance.

a. Domestic Water Heating.

(1) The solar system for domestic water heating will be designed to provide a minimum of 35 percent of the domestic water requirement on an annual basis.

(2) The domestic water heating system will be designed preferably using nontoxic antifreeze solution in the solar collector in geographical areas where there is a possibility of freezing. If toxic heat transfer fluid is used, two heat exchangers or two-wall separation between the toxic solution and the potable water shall be provided.

(3) Provisions will be made for automatic shutoff of the solar collector pump when available solar energy is inadequate to increase the water temperature above that of the incoming supply water.

(4) Thermal energy storage will be provided and sized to meet the design load of not more than one day. However, this requirement may be modified to suit the climatic conditions and/or the economic trade-offs between storage capacity and collector area. The heated water will be piped to the inlet of the conventional water heater/storage tank.

(5) Solar collectors will be off-the-shelf items.

b. Space Heating.

(1) The space heating system will be designed to provide, as a goal, at least 25 percent of the space heating requirement, on an annual basis, using off-the-shelf solar collectors. Every effort should be made to exceed the 25 percent goal based on engineering/economic analysis.

(2) Thermal energy storage will be provided with capacity sized 2.0 gallons per sq. ft. of collector. However, this requirement may be modified to suit climatic conditions and/or the economic trade-off between storage capacity and collector area.

c. Domestic Water Heating and Space Heating.

(1) The solar design will be a combined domestic water heating and space heating system.

(2) The domestic water heating system will be designed in accordance with the guidance established in paragraph 4a above.

(3) The space heating system will be designed in accordance with the guidelines established in paragraph 4b above.

(4) Thermal energy storage will be provided with capacity sized 2.0 gallons per sq. ft. of collector for space heating and domestic water heating. However, this requirement may be modified to suit climatic conditions and/or the economic trade-off between storage capacity and collector area.

d. Domestic Water Heating, Space Heating and Space Cooling.

(1) Under this category, the solar design may be a combined domestic water heating, space heating and space cooling system, or the domestic water heating can be independent, not combined with space heating or cooling.

(2) The design guidelines for domestic water heating and space heating in paragraph 4a and 4b will be followed, as applicable.

(3) Because of today's state of technology, solar cooling systems should not be considered for facilities with a total air conditioning load of less than 40 tons unless prior approval is obtained from HQDA (DAEN-MPE).

(4) Space cooling by solar will be accomplished by absorption water chillers. The solar system design will be based on providing 240 degrees F medium from the solar collectors. The project specification shall allow absorption chillers that are capable of operation on water below 240 degrees F without crystallization. A minimum temperature will not be established in the specification or on the drawings.

(5) Thermal energy storage will be provided with capacities sized 2.0 gallons per sq. ft. of collector. However, the requirement may be modified to suit climatic conditions and/or the economic trade-off between storage capacity and collector area.

5. Architectural Guidance.

a. A qualified consultant will be selected to determine whether ground mounted or building mounted systems shall be designed to be architecturally compatible with the total environment.

b. Solar panels should be ground mounted wherever possible in order to minimize damage to roof systems caused by roof penetrations and maintenance activities.

(1) When ground mounted, the collectors will be placed upon structural steel supporting frames. The structural steel frames will be elevated so that the deck level supporting the collector panels will be above the surrounding ground at a height to provide adequate headroom to perform maintenance and to permit control of vegetation beneath the collector panels. Adequate provisions will be made for protection against vandalism. The steel supporting frames will include adequate steel deck grating walkways for maintenance and inspection purposes.

(2) When solar collectors must be located on the roof, access to the roof will be limited by providing locking roof scuttles and doorways; permanent exterior mounted ladders will not be permitted. To protect the roofing, traffic on the roof will be controlled with walkways and working platform of prefabricated asphalt planking layed directly over builtup roofing felts. Solar collectors, controls, etc. will be placed upon elevated structural steel supporting frames fastened to the structural deck of frame with a minimum number of roofing penetrations. Supporting frame will be elevated for at least two feet clearance above roof surfaces. Supporting frame penetrations will be made watertight with base and cap flashings. Safety railings needed for protection at roof edges will be provided.

4. Structural Guidance.

a. Solar panels and associated system elements on the exterior of the building will be designed to support the dead and live loads, and anchored so as to resist positive and negative wind pressures, uplift and turbulence forces derived from shape or configuration and positions of the panels based on the design wind speed, in accordance with the requirements in ETL 1110-3-257. The adequacy of the structural framing systems and the solar panel assembly system will be checked for the dead and live loads and the combination loads of wind, dead and live loads.

b. In evaluating the capability of existing roof slab and roof framing system or structural framing elements to carry additional dead and live loads caused by the solar system components, the strengthening of structural framing as appropriate will be provided where necessary to carry the added loads down to the foundation. Roof penetrations will be kept to the practicable minimum.

DEPARTMENT OF THE ARMY,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, D.C., December 28, 1979.

Subject: Requirements for Solar Energy Systems in fiscal year 1980 Military Construction Authorization Act, Public Law 96–125, November 26, 1979.

1. Reference is made to Engineer Technical Letter (ETL) 1110–3–302, DAEN-MPE, subject: Engineering and Design, Evaluation of Solar Energy, dated March 14, 1979.

2. Section 804 in the subject fiscal year 1980 MC Act states that all new facilities (including family housing) placed under design after the date of the enactment of the subject Act, shall include consideration of solar energy systems in those cases in which solar energy has the potential to save fossil-fuel-derived energy. All contracts for construction resulting from such design shall include the requirement to furnish and install solar energy systems if such systems can be shown to be cost effective.

3. The referenced ETL provided final Army implementation of the DOD guidance on the provisions of solar energy systems requirements in the FY 79 Military Construction Authorization Act, Public Law 95–356. In this ETL, paragraph 3, Background, subparagraph b, the language is stated as:

> The Military Construction Authorization Act, 1979, Public Law 95–356 in Section 804 requires that 25 percent, based on the estimated dollar value of the construction cost, of all new facilities except family housing (family housing requirement is 100 percent) that are placed under design shall include solar energy systems to the extent that engineering analyses demonstrates them cost effective. The law makes this requirement effective ninety days after enactment of the act. The law was enacted 8 September 1978; therefore, all design starts on or after 7 December 1978 are subject to these requirements. DOD requires a summary of the engineering analysis be fur-

nished prior to initiating the final design. Essentially, the act requires that an engineering/economic analysis be made as a part of the design process for all military projects. Those projects for which solar energy applications are determined to be cost effective are to be designed as solar energy projects.

4. The provisions of paragraph 3b, as stated above, shall be modified as stated below:

> The Military Construction Authorization Act, 1980, Public Law 96–125 in Section 804 requires that all new facilities (including family housing) that are placed under design shall include solar energy systems to the extent that engineering analyses demonstrates them cost effective. Essentially, the act requires that an engineering/economic analysis be made as a part of the design process for all military projects. Those projects for which solar energy applications are determined to be cost effective are to be designed as solar energy projects.

5. This modification, essentially, only removes the statement ". . . 25 percent, based on the estimated dollar value of the construction cost, of . . . ," from paragraph 3b. All other provisions of the ETL, and the Engineering Instructions appended to the ETL, continue effective.

For the Chief of Engineers:

LEE S. GARRETT,
Chief, Engineering Division,
Military Programs Directorate.

Question. Do you agree with the life cycle costing procedures for solar systems as promulgated by DOD or do you feel there should be some changes?

Answer. We find no basic difficulties with the life cycle costing (LCC) procedure for solar systems, as promulgated by DOD. In fact, we have found that this procedure tends to cast solar systems in a more favorable economic light than the LCC procedure we use to evaluate the economic consequences of other types of proposed investments. We are concerned, however, that there are important differences between the LCC procedure for solar systems, as promulgated by DOD, and the LCC procedure for energy conservation, as promulgated by the Department of Energy (DOE) under the provisions of Public Law 95–619 ("National Energy Conservation Policy Act," November 9, 1978) and Executive Order 12003 ("Relating to Energy Policy and Conservation," July 20, 1977). We believe the two procedures should be at least compatible, if not identical, for the sake of uniformity throughout the federal sector. If uniformity is to be achieved, several changes will be required, either in the DOD procedure or in the DOE procedure.

Question. I'm concerned from your jurisdiction data that you may not be giving solar a fair shake. For instance, throughout your justification you estimate the cost of solar system at $9.07 times the number of square feet in the facility to be constructed.

a. Where did you get the "magic" figure of $9.07 per square foot for a solar system cost?

b. Are you planning to bid solar systems as an "additive alternate" as a rule?

c. Are any of your projects designed with passive solar considerations?

d. How many of your solar systems that are in your fiscal year 1981 request resulted from Section 804 in the fiscal year 1979 Act?

Answer. a. The unit cost of $9.07 per square foot was developed on early programing data by the Army using data published in July 1977 page 44 of Heating/Piping/Air Conditioning/Journal. Using national average prices for the components of a solar system the calculations resulted in the unit cost of $9.07/sf on a ratio of total building area. This initial cost data will be adjusted based on actual design costs, savings, and cost benefits as determined by the design agency in later stages of design development.

b. Yes, using the "additive alternate" approach the basic facility cost can be separated and tracked separately. Solar systems costs can then be reviewed independently and if acceptable, as defined by Section 804 the MILCON Act, could be awarded.

c. Yes, guidance for passive solar considerations, has been issued to design agencies for inclusion in all buildings.

d. All of them are as a result of Section 804 in the fiscal year 1979 Act, except project 62 at Tobyhanna Army Depot, Pennsylvania.

ENERGY MONITORING AND CONTROL SYSTEMS (EMCS)

Question. Two years ago your request was heavy with EMCS. Discuss your progress in getting these projects implemented. Are they yielding the anticipated return? Cite a specific example of a completed system comparing estimated versus actual savings.

Answer. Below is listed the current status of implementing EMCS projects.

Complete	6
Under construction	16
Under design	13
Programed	9
Total	44

The installations where the EMCS system have been completed have also implemented other energy saving plans and other energy saving projects. Therefore there is no hard metered data available showing savings that can be attributed totally to the EMCS system. However a comparison of expected savings from all ECIP projects to actual savings indicates that the EMCS systems are yielding the anticipated energy savings.

One example of savings is at Ft. Eustis. At this installation ECIP projects for both EMCS and insulation and storm windows have been completed. The estimated annual savings for the above projects is 157,000 Mega BTU. The actual savings (FY78 minus FY79 consumption) is 186,000 Mega BTU. However it should also be noted that eight percent fewer degree days were recorded during FY79 than FY78.

On an overall basis, information indicates that anticipated savings are being realized.

Question. You have presented testimony previously on total energy systems (Fort Bragg, etc.). Where do these efforts stand? How many TE Systems are in your five year program?

Answer. Total energy systems are still being considered. The Energy Engineering Analysis Program for fiscal year 1980 for Fort Bragg will investigate a TE System on a basewide basis instead of on a single or multiple facility basis. No TE Systems are currently in our five-year program.

Question. Review your progress in the areas of conversion of power plants to coal.

Answer. The Army has identified a number of potential power plants for conversion to coal. This list also includes plants which could burn other forms of solid fuel such as wood-coal combinations or refuse. Several plants are under design.

Question. Review your progress in the area of the use of refuse derived fuel.

Answer. The Army is presently constructing one refuse-fired plant which was approved in the fiscal year 1979 Military Construction Program. Two plants are under design based on the fiscal year 1980 Military Construction Program and one plant is contained in the present fiscal year 1981 program.

Question. Review your progress in the areas of the use of geothermal power.

Answer. Preliminary information indicates Army installations are generally located in geographical regions with limited geothermal potential. Hawthorne AAP is one location where this source of energy may be available. This is being investigated.

Question. Review your progress in the areas of biomass fuel.

Answer. The fiscal year 1980 Military Construction Program contains one plant at Red River Army Depot which will burn waste wood. A similar plant is contained in the present fiscal year 1981 program at Ft. Stewart, Georgia. Other possible sites are being considered for future projects. Ten small plants at Ft. McCoy, Wisconsin, are burning wood this heating season.

KOREA

Question. It appears to me that we are in the same status in Korea as we were two years ago—for the indefinite future, one year at a time. Why have you decided to proceed with construction in view of the tenuous nature of our forces in Korea?

Answer. The Presidential statement of July 20, 1979 indicated that further ground force withdrawals from Korea would be held in abeyance except for a limited number of support spaces to include an I–HAWK Battalion. He further indicated that a reassessment of future withdrawals would be conducted in 1981. As a result, the Army has taken the position in the fiscal year 1982–1986 Army Guidance that, for programing and budgeting purposes, 2nd Division resources would be assumed to remain in Korea at least through the POM period.

In light of this and the unique circumstances existing in Korea today the expenditure of MCA is considered essential. The majority of real property facilities in 8th Army are temporary structures dating from the Korean War. A small number of semi-permanent and permanent structures of Japanese origin are also in use. Very little new construction of semi-permanent facilities has occurred due to funding constraints. With the one time exception of the year following the Pueblo incident (1968), sufficient MCA resources for cost effective facility additions and/or replacements have been continually deferred since the end of the Korean War. At the same time constraints on OMA funding have contributed to a growing backlog of maintenance and repair (BMAR). Starting in the mid-1970's increased OMA funding was provided by HQDA to allow for minimal repair of essential facilities pending the selective ground force withdrawal in the 1979–1982 timeframe. The interim decision to leave the 2nd Division in the Republic of Korea pending a reassessment in 1981 requires we begin to replace mission essential facilities. The fiscal year 1981 MCA program addresses a minimum of the most severe mission related requirements and utility systems that have deteriorated to the point that the health and safety of 8th Army personnel are in jeopardy. There is no alternative other than the near term replacement of over-age, inadequate and substandard facilities using MCA resources. The continued exclusive use of OMA funding is no longer practical. The present deteriorated state of facilities will require some continued use of OMA funding to complement a moderate multi-year MCA facilities modernization program that focuses on mission and support facilities and minimum acceptable quality of life for our soldiers in Korea. Resources will be expended for the most part on those 2nd Division installations that would be retained until the late 1980's in the event of a resumption of withdrawal plans and on residual force installations that will be retained indefinitely in any event.

The fiscal year 1981 MCA program for EUSA totals $62.4M and consists of two groups of projects; 12 projects costing $26.6M support valid requirements at residual installations. The balance of $35.8M relates to the 2ID area. This 2nd Division program includes troop housing, tactical maintenance shops, and the upgrade of utilities.

The new troop housing will replace badly deteriorated quonsets and alleviate a condition where enlisted soldiers are crowded into areas as small 50–60 sq. ft. per man with outside latrines as far off as 100 yards. The tactical maintenance shops will replace deteriorated temporary structures with inadequate or non-existent heating, no sanitation facilities, too small for modern equipment and with little or no hardstand area. The continued use of these facilities over a prolonged period in the Korean climate has markedly degraded the equipment readiness of the 2nd Division. Finally, the upgrade of the water system in the Camp Casey area reflects both an over-age and badly overtaxed system as well as the encroachment of civilian communities upon water sources. The Camp Casey infiltration galleries are badly contaminated by increasing upstream sewage intrusion, and the entire system has suffered over 155 major interruptions in the past year alone.

SPECIAL WEAPONS SECURITY

Question. Discuss the status of this effort.

Answer. Twenty-three (23) percent of nuclear storage sites outside the continental United States have new hardened and improved civil facilities. Work at the remaining sites is being funded directly by NATO Infrastructure funds and funds have been approved by NATO in Slices 28, 29, and 30 and are programmed for Slice 31. New lighting and communications been fully integrated at 28 percent of these and this work is continuing. We are installing a prototype of an electronic intrusion detection system which if tests, to begin in April, prove successful, will be installed at these sites to further enhance the detection of intruders. Within the United States, all construction contracts are underway at nuclear storage facilities. The last of these is expected to be completed in October 1980.

Question. Why is it taking so long to recoup NATO funds for the work that was prefinanced?

Answer. To expedite completion of the program, construction preceded the March 1979 final NATO criteria approval. Accordingly, facilities were constructed to criteria considered appropriate at the time, but which exceeded final NATO approved criteria. It is the NATO International Staff position that NATO will not pay for construction above NATO criteria. It is the U.S. position that since facilities were constructed to criteria in force at time of construction award, NATO should pay for all construction. This disagreement is delaying recoupment.

PROJECTS-GENERAL

Question. Is every project in your request under design? (If not provide a list of those projects not under design, give the design start and completion dates, and explain the delay.)

Answer. All projects in the request are under design, except for the following three projects:

Station and project	Design start	Design complete	Cause for delay
Fort Bragg, N.C.: Barracks modification.	June 1980	April 1981	Project was added in November 1979 by direction of higher authority.
Fort Stewart, Ga.: Regional sewer tie-in.	NA	NA	No design required by U.S. Government. Supplemental funds only for Army's share of system to be constructed by city of Hinesville, Ga.
Fort Douglas, Utah: Building modification.	April 1980	November 1980	Project was added to the program in November 1979 to support the realinement at Fort Douglas. Delay until fiscal year 1982 was considered inappropriate due to cost savings which would be lost due to the delay in release of the excess facilities.

Question. What rates of inflation have you used in estimating the costs of projects in your request? Provide an example showing how inflation is factored into your estimate.

Answer. Inflation Indicies for MILCON use in the FY 81 Budget are:

Fiscal year:	*Percent*
1979	9.6
1980	9.2
1981	9.3
1982	7.6
1983	7.2
1984	6.6

Examples showing how inflation is factored into the estimate follows:

a. The calculations for a project with a six month construction period and the following milestones are:

(1) Basic cost (1 October 1979) unit price = \$40.00/SF with historical ENR Index = 1899.

(2) Contract award date 1 Jan 1981.

(3) Midpoint of construction 1 April 1981, projected ENR Index = 2098.

(4) Construction completion date, 1 July 1981.

(5) Projected project cost using midpoint of construction is then:

$$\text{Project unit cost} = \$40.00/\text{SF} \times \frac{2098}{1899} = \$44.20/\text{SF}$$

$$\text{Cost Growth} = \frac{2098}{1899} = 10.5 \text{ percent include in unit price.}$$

b. The calculations for a project with a two year construction period and the following milestones are:

(1) Basic cost (10 October 1979) unit price = \$40.00/SF with historical ENR Index = \$1899.

(2) Contract award date, April 1, 1981.

(3) Midpoint of construction April 1, 1982, projected ENR = 2268.

(4) Construction completion dated March 31, 1983.

(5) Projected project cost using midpoint of construction is then:

$$\text{Project unit cost} = \$40.00/\text{SF} \times \frac{2268}{1899} = \$47.80/\text{SF}$$

$$\text{Cost growth} = \frac{2268}{1899} = 19.4 \text{ percent included in the unit price.}$$

Question. Provide a list of projects in this request that were previously requested and failed authorization. State the reason the project was not authorized.

Answer. The following tabulation lists projects that were included in prior year requests by the Army and the reason that authorization was denied:

Station	Project	CWE (thousands)
Fort Hood (fiscal year 1980)	Child care center[1]	$2,000
Germany (fiscal year 1980)	Ammunition upload facilities[2]	13,800
Fort Leavenworth (fiscal year 1980)	Dental clinic alteration and addition[3]	1,250
Germany (fiscal year 1980)	Basic load site, Hanau[4]	2,300
Do	Pave roads and holding areas, ASP1, Vilseck[5]	1,700
Do	Pave roads and holding areas, ASP2, Hohenfels[5]	770
Korea (fiscal year 1980)	Milk plant[6]	3,950

[1] Project was deferred by SASC, approved by HASC, and deferred by conference, with the direction that DOD establish a department policy with regard to MCA or NAF funding sources for child care centers. That policy has been established and provides for appropriated funding for child care centers.

[2] Portions of the proposed project were included in an fiscal year 1980 project that was denied authorization with the direction to seek NATO funding for the requirement. The establishment of a NATO construction category eligible for common funding is being sought. The proposed project contains the most urgent requirements for ammunition upload for U.S. forces and, therefore, U.S. prefinancing of the project is being requested.

[3] Project was deferred by the SASC, approved by the HASC, and deferred by the conference. The SASC report indicated the facility was deferred based on its justification being based on the treatment of dependents. This facility is sized based on active duty strengths only.

[4] Project was deferred by the SASC, approved by the HASC, and deferred by the conference. The SASC report indicated the facility should be built with NATO infrastructure funds. The project is not in an eligible NATO infrastructure funding category since it is related to basic loads of U.S. units which are a national responsibility.

[5] These projects were deferred by the SASC, approved by the HASC and deferred by the conference. The SASC report indicated the facilities should be built with NATO infrastructure funds. The projects are not in an eligible NATO infrastructure funding category since they are related to training and basic load ammunition which are a national responsibility.

[6] The project was deferred by both the SASC and HASC. The reasons provided were that the population to be served is uncertain, and other alternatives to a U.S. constructed plant may be available. The plant is sized to serve the residual force and can use additional shifts to provide required services for forces above the residual force. No other economical alternative to a U.S. constructed plant is available.

Question. Provide a list of projects in this request that were previously authorized, but for some reason were never built. State the reason the project was not built.

Answer. The tabulation below lists the projects that were previously authorized and the reasons they were not constructed.

[Dollar amounts in thousands]

Station	Project	CWE
Fort Leonard Wood	Petroleum storage facility[1] (fiscal year 1979 at $2,437)	$5,200
Fort Polk	Missile maintenance facility[2] (fiscal year 1979 at $9,206)	1,200
Do	Tactical equipment shop and facilities[3] (fiscal year 1979 at $2,272)	4,500
Germany	Maintenance facilities modernization, Mannheim[4] (fiscal year 1979 at $7,000).	7,000
Do	Flight simulator, Mannheim[5] (fiscal year 1979 at $1,739)	4,110
Do	Tactical equipment shop, Wildflecken[6] (fiscal year 1979 at $1,037; appropriation $532).	3,250
Do	Maintenance facilities modernization, Baumholder[7] (fiscal year 1979 at $14,000).	14,000

[1] Project was authorized with additives but could not be awarded—not even base bid—due to high bids received for oil storage tankage.

[2] This project was authorized and funded in fiscal year 1979 as part of another project, but this part of the work could not be awarded within the authorization and funds available.

[3] Project was underprogramed initially and bids exceeded available funds. Subsequent revisions to project, plus cost growth, cause current cost to far exceed available authorization.

[4] This project was originally modernization of existing facilities, but because that was not totally feasible, the project had to be deferred and revised to include new construction as well as modernization.*

[5] Project was underprogramed and could not be built due to need to increase scope which resulted in increased cost. Current cost estimate far exceeds available authorization.*

[6] Project was underscoped and was deferred due to the high project cost estimate and the shortage of fiscal year 1979 funds.*

[7] Project was originally for modernization of existing facilities but because this was not economically feasible had to be deferred and revised to provide new construction instead.*

* Available authorization and funding for these projects had to be used to offset increases on other construction projects in Germany caused by dollar devaluation and the unanticipated high rate of construction cost growth in Germany.

The following projects were not constructed because the original designs had to be revised to incorporate increased state-of-the-art technology brought about by the application of more stringent air pollution abatement control criteria by the several states and EPA. This caused project cost estimates to far exceed available authorizations.

[Dollar amounts in thousands]

Station	Projects	CWE
Iowa AAP	Contaminated waste processor—APC (fiscal year 1979 at $501)	$2, 100
Kansas AAP	Contaminated waste processor—APC (fiscal year 1979 at $620)	2, 250
McAlister AAP	Contaminated waste processor—APC (fiscal year 1980 at $670)	2, 150
Milan AAP	Contaminated waste processor—APC (fiscal year 1979 at $637)	2, 100
Sunflower AAP	Contaminated waste processor—APC (fiscal year 1979 at $518)	2, 250
Do	Contaminated waste incinerator—APC (fiscal year 1979 at $763)	1, 700

The following projects were previously authorized, but could not be constructed because funds were not appropriated:

[Dollar amounts in thousands]

Station	Projects	CWE
Fort Benning	Small arms maintenance and storage (fiscal year 1979 at $3,645)	$5, 200
Fort Eustis	Cargo handling training facility (fiscal year 1979 at $3,666)	4, 500
Fort Hunter-Liggett	Health clinic with beds (fiscal year 1980 at $1,350)	1, 500
Fort Stewart	Bn. HQ and classroom buildings (fiscal year 1978 at $793) scope is now 2 times original.	1, 850
Germany	Simulated city (MOUT)—Hohenfels (fiscal year 1980 at $3,100)	3, 750
Do	Barracks—Nuernberg (fiscal year 1980 at $7,300)	9, 800
Letterkenny AD	Ammo truck inspection facility (fiscal year 1978 at $310)	380
Picatinny Ars	Insulation, storm windows, and weatherstripping (fiscal year 1980 at $1,800).	1, 950
Red River AD	Bridge crane (fiscal year 1978 at $1,193)	1, 300

Question. Are any projects in your request impacted by pending or planning base realignment announcements?

Answer. There are no projects in our request which would be impacted by pending or planned base realignment announcements.

Question. Provide for the record a list of unfunded construction projects in order of priority totalling not more than $100 million that can be put under contract during FY 81. Include with your list the project design status.

Answer. The following tabulation is a list of unfunded construction projects that could be placed under construction in FY 81. The list is in priority order. (No. 1 is the highest priority.) The total estimated cost is $99,899,000. Design status of the individual projects is indicated under percent of design.

Priority/station	Description	CWE (thousands)	Percent design
1. Fort Bragg	PN-363—Enlisted barracks	$1, 750	35
2. Presidio of San Francisco	PN-110—Hospital emergency generator	750	75
3. Fort Hood	PN-358—Tactical equipment shop	3, 250	35
4. Rock Island Arsenal	PN-702—Alter administration headquarters II and III.	9, 300	35
5. Germany Goeppingen	PN-418—Physical fitness center	2, 950	35
6. Fort Lewis	PN-349—Instrument landing system	350	90
7. Presidio of Monterey	PN-47—General instruction facility	6, 847	35
8. Fort Belvoir	PN-431—Heating fuel storage tanks	1, 800	98
9. Schofield/Wheeler	PN-103—Aircraft maintenance hangar	8, 400	35
10. Fort Dix	PN-208—Fuel oil storage	710	35
11. Fort Stewart	PN-171—Division logistics facility	5, 206	100
12. Fort Jackson	PN-133—Hospital elec/mech. upgrade	16, 500	20
13. Fort Eustis	PN-303—General instruction building addition	3, 700	90
14. Schofield Barracks	PN-98—Dental clinic	2, 770	100
15. Kwajalein	PN-217—Marine shop	1, 250	80
16. Schofield Barracks	PN-87—Dining facility modification	2, 200	5
17. Fort Hunter Liggett	PN-58—Technical documentation facility	2, 121	35
18. Fort Leavenworth	PN-82—Upgrade Munson AH	9, 900	35
19. Aberdeen PG	PN-284—Storm sash on buildings	750	35
20. Fort Bragg	PN-348—Yadkin Rd. extension	1, 910	35
21. Fort Benning	PN-319—Bde maintenance facility	2, 929	80
22. Fort Jackson	PN-118—Consolidated commo facility	956	100
23. Walter Reed AMC	PN-94—Alteration/Addition building 1	13, 600	80
Total		99, 899	

Question. Senator Bradley has asked about three projects at Fort Dix, New Jersey. A copy of his letter is attached. Provide details on each of these projects to include design status and Form 1391's. Are they high priority Army requirements?

U.S. SENATE,
Washington, D.C., March 26, 1980.

Hon. GARY HART,
Chairman, Subcommittee on Military Construction, Senate Armed Services Committee, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: As you are aware, the Department of Defense had announced last year its intention to shelve realignment proposals for Fort Dix. It was clear in the hearings in which you graciously permitted me to participate that Fort Dix had been drained of any attention to its physical plant for the last seven years. The freeze on all construction became, in itself, an argument for terminating basic training at Fort Dix.

In addition to the appropriations requested by the Department of Defense, the following three projects have been reviewed by the Department of the Army Office of Chief Engineer. It is my understanding that they could be carried forward if the Department of the Army requested funding.

Project No. 202.3, Central Heating Plant Alteration, Cost: $900,000.

This project would save approximately 350,000 gallons of No. 6 Fuel Oil at Fort Dix per year through efficiencies realized by the interconnection of two main boiler plants.

Project No. 208, Fuel Oil Storage Facilities, Cost: $700,000.

Project would enable Fort Dix to comply with DOD policy initiated in 1978 requiring all installations to have a 30-day reserve fuel oil storage capability.

Project No. 205, Armament Maintenance and Storage Facility, Cost: $1.6 million.

Project would enhance the security of armament maintenance and storage operations to meet present DOA requirements.

These projects are relatively modest improvements which I would deeply appreciate your considering in the FY 81 Military Construction Authorization Bill.

Sincerely,

BILL BRADLEY,
U.S. Senator.

Answer. The three projects in question are necessary to meet valid Army requirements. The project details are contained in the attached DD Form 1391's. Design status on the proposed projects is given below.

Project title:	*Design status (percent)*
Interconnection of central heating plants	[1] 90
Fuel storage facilities	[2] 35
Arms maintenance and storage facilities	[2] 35

[1] The design of this project was completed over 2 years ago, but requires update.

[2] Concept design has been completed, but requires review to insure current criteria are met.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Primary facility				$701
Heating plants interconnection	LF	2,400	$292.08	(701)
Supporting facilities				115
Emergency power generation	EA	1	LS	(104)
Boiler deactivation			LS	(11)
Subtotal				816
Contingency (5 percent)				41
Total, contract cost				857
Supervision, inspection, and overhead (5 percent)				43
Total, request				900
Total, request (rounded)				900
Installed equipment—Other appropriations				0

Description of proposed construction: Interconnection of Central Plants in Buildings 5252 and 5426. Work consists of excavation, backfill, paving repairs and installation of new insulated underground condensate lines in steel conduit complete with expansion loops, sectionalizing valves, traps, drips, manholes and pumps. Also included is mothballing three boilers and related equipment to be deactivated in Bldg 5252 and providing and installation of a new emergency power generator in Bldg. 5426. Project is not sited in a flood plain.

Requirement.—

Project.—Interconnection of two central boiler plants at Fort Dix.

Requirement: This project is required to affect fuel conservation and economical operation and maintenance of heating plants at the installation.

Current situation.—At the present time, the heating plant in Bldg 5252 (Hospital Plant) and Bldg 5426 (Scott Plaza Plant) are under utilized. The Hospital Plant, with a capacity of 120,000 pounds of steam per hour, supports a load of 30,000 pounds of steam per hour during the winter heating season. The Scott Plaza Plant with a capacity of 250,000 pounds per hour supports a load of 120,000 pounds per hour during winter. Efficiencies of the two plants are much lower in the summer because of extremely light loads. The Scott Plaza Plant has more than enough capacity to sustain the combined extreme loads of both plants. Interconnection will enable deactivation of the Hospital Plant resulting in economies in labor resources, maintenance and repair operations and fuel consumption.

Impact if not provided.—Existing heating plant operation will continue at Fort Dix with increasing costs.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Primary facility				$644
Storage facility				(644)
Total				644
Contingency (5 percent)				32
Total, contract cost				676
Supervision, inspection and overhead (5 percent)				34
Total, request				710
Total, request (rounded)				710
Installed equipment—Other equipment				0

Description of proposed construction.—Construct four underground fuel oil storage tanks from 70 to 715 barrels (BL) capacity; work includes excavation, backfill, tank installation, concrete holding pad, heating coils, pumps, piping, access manholes, controls, electrical work, painting and test. Construct six above ground fuel oil storage tanks from 1,200 BL to 10,000 BL capacity; work includes earth work, concrete and gravel base, erection of tanks, pumps and houses, piping, controls, berms, electrical work, painting and test. Not sited in a flood plain.

Requirement.—453,333 BL Adequate: 202,262 BL Substandard: None.

Project.—Construction of underground and above ground fuel oil storage tanks.

Requirement.—This project is required to comply with DOD directed policy that all heating plants with a capacity of 5 MEGA BTU per hour and above will be provided with a 30-day fuel oil storage capability.

Current situation.—At the present time, 12 post heating plants of 5 MEGA BTU per hour capacity and larger have a fuel storage capacity of 202,262 BL. Under normal operating conditions, the 12 heating plants operate with refilling the tanks throughout a 7 to 21-day refueling cycle based on their hourly MEGA BTU output. Existing storage facilities are incapable of accepting the required 30-day supply of fuel oil.

Impact if not provided.—Adequate fuel will not be on hand to prevent severe freeze damage, inconvenience to building occupants and eventual disruption of mission accomplishment in the event that essential fuel is temporarily in short supply.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Primary facility				$1,111
Building	SF	16,400	$58.54	(960)
20-ton crane			LS	(151)
Supporting facilities: Utilities, paving, site improvement, and hardstand				518
Subtotal				1,629
Contingency (5 percent)				81
Total, contract cost				1,710
Supervision, inspection, and overhead (5 percent)				85
Total, request				1,795
Total, request (rounded)				1,800
Installed equipment—Other appropriations				0

Description of proposed construction: Construct a permanent, fire-resistant arms maintenance and storage building complete with required utilities services, fire protection, communications system, roads, parking area security fencing and site improvements. Provide compressed air, exhaust and dehumidification systems and 20-ton overhead travelling crane. Provide for installation of IDS system; IDS system to be produced and installed by using agency. Heating from self-contained, oil-fired plant. Demolish two temporary buildings (41,575 SF.) Not sited in a flood plain. Air Conditioning—5 Tons.

11. Requirement: 16,400 SF Adequate: None Substandard: 13,329 SF.

Project.—Construction of a permanent, adequate armament storage and maintenance facility at Fort Dix.

Requirement.—This project is required to provide secure facilities to safeguard against the theft of small arms and other armament material and to provide for adequate armament maintenance in support of the active Army, Army Reserve, National Guard and ROTC units.

Current situation.—The arms maintenance and storage functions at this installation are now carried out in four World War II temporary buildings, three of which are wooden mobilization type structures and the fourth a semipermanent metal building. These four buildings do not meet current physical security standards and lack proper insulation, humidity control, lighting, heating, ventilation, electrical distribution and latrine facilities. The substandard conditions place substantial demands on manpower security resources, are a constant drain on maintenance, repair and energy resources and contribute to inefficient operations and adverse safety, health and morale conditions for both military and civilian personnel.

Impact if not provided.—Arms maintenance and storage will continue in buildings requiring costly security, maintenance and repair measures and operations will continue inefficiently in an environment that impacts adversely on mission accomplishment.

ENERGY CONSERVATION FACILITIES, ARMY INSTALLATION, VARIOUS LOCATIONS

Question. Why is SIOH 6.5 percent on overseas installations projects? How much money is involved in going from 5 to 6.5 SIOH on overseas projects?

Answer. This 6.5 SIOH charge conforms with the current Corps rate charge for overseas work (for projects outside of contiguous U.S.). Prior to 1 October 1979, and since 1 July 1972, one Corps-wide uniform rate charge of 5 percent was in effect for both CONUS and overseas work. In recent FYs a larger percentage of the total program shifted to the more costly overseas operations. Historically, the actual rate for overseas work has been much higher than the 5 percent previously charged, averaging 7 percent for the period fiscal year 1973 through fiscal year 1979. The higher overseas operational costs, over which we have limited control, include such items as cost of living allowances, PCS moves caused by limited tours of duty, geographical spread of work, dollar fluctuation effects on local national salaries, and requirement to do business in two languages and to two standards. In order for overseas projects to bear their share of costs and to maintain solvency of the uniform rate account, it was found necessary and equitable to increase the S&A (or SIOH) rate charge for overseas projects financed from the Corps uniform rate account to 6.5 percent, effective 1 October 1979.

On the basis of an estimated construction cost of $14 million of overseas Energy Conservation Facilities for fiscal year 1980 program, an amount of $0.21 million is involved. On the basis of an estimated construction cost of $8 million of overseas Energy Conservation Facilities for fiscal year 1981 program, an amount of $.120 million is involved.

WOOD BURNING PLANT, FORT STEWART, GA.

Question. Provide additional details on this project. Is it patterned after another working model? Who will harvest and process the wood fuel?

Answer. The wood boiler addition to the Fort Stewart boiler plant is essentially patterned after two working models in the commercial sector. These are at Alexander Mills in Alexander City, Alabama and Burlington Electric Utility Company, Burlington, Vermont. Harvesting and processing the wood fuel will be basically accomplished by contract. Some in-house efforts are anticipated on the processing cycle.

Question. Provide a more detailed cost estimate.

Answer. The breakdown of estimated costs for the wood boiler is as follows:

	Amount
Site preparation, including demolition	$612,000
Wood yard and processing equipment	1,031,000
Wood boiler	1,400,000
Structure addition and boiler support equipment	1,782,000
Pollution control and electrical work	1,044,000
Instrumentation and control	325,000

INSTALL INSULATED GLASS AND PANELS, FORT CAMPBELL, KY.

Question. Payback on this project is marginal. When were these barracks built? What is their remaining life?

Answer. These permanent barracks were built during the 1950's. The remaining life of the buildings is at least 30 years.

Question. Provide a detailed cost estimate and calculations for amortization period and EC ratio.

Answer. Cost estimate is as follows:

Remove 310,420 Square feet of projected steel windows at $1.21/SF=$376,000.

Install 218,272 square feet of one-half inch insulated glass windows at $19.66/SF=$4,291,000.

Install 92,148 square feet of Insulated Panels at $28.45/SF=$2,621,000.

	Amount
Estimated contract cost	$7,288,000
Contingency and SSA cost	1,130,000
Estimated project cost	8,418,000

Energy savings totaling 181,000 MBTU per year is obtained by reducing conductive losses by 40,200 MBTU and infiltration losses by 140,800 MBTU. At $2.95/MBTU the savings realized by project accomplishment is estimated to be $533,950 per year.

Amortization Period = $ project cost ÷ $ estimated savings = $8,418,000 ÷ $533,950 = 15.76 years.

EC Ratio = MBTU yearly savings ÷ project cost in thousands $.

E/C = 181,000 ÷ 8,418 = 21.5

BOILER MODIFICATION, TWIN CITIES AAP, MINN.

Question. The intent of this project is not clear. Will you continue to burn oil and gas?

Answer. The boilers are presently fitted with inefficient dual gas/oil burners. The project will provide new higher efficiency burners which will utilize the same fuel.

Question. Did you consider and analyze converting to coal?

Answer. Conversion to coal was considered. However, at least five of the six boilers involved would require complete replacement in order to burn coal, and extensive revisions to the plants would be needed. Long range planning includes consideration of a replacement boiler plant which would burn coal. Cost of a new coal fired plant is in the range of $65 million, and the savings generated by this ECIP project are expected to amortize the project cost before the coal conversion project is implemented. Twin Cities AAP currently operates at a relatively low level of activity.

OUTFALL SEWER LINE, REDSTONE ARSENAL, ALA.

Question. What happens to the effluent now?

Answer. Presently one treatment plant discharges into the Tennessee River and the other three discharge into Wheeler Wildlife Refuge.

Question. Why does the effluent have to be pumped to the Tennessee River?

Answer. NPDES permit limitations for discharging into Wheeler Wildlife Refuge are more stringent than those for discharging into the Tennessee River. In order to discharge into Wheeler, upgrade of the treatment capability for treatment plants will be required. An economic analysis indicates the outfall line to the Tennessee is more economical to install and maintain than upgrading the treatment plants to meet the Wheeler discharge permit requirements.

Question. Will you have to acquire pipeline right-of-way on private land?

Answer. No, the pipeline will be located on land presently owned by the Army.

Question. Provide a more detailed cost break down.

Answer.

Item:	Cost (*thousands*)
Pumping stations	$1,333
Forced main	3,728
Sampling stations	14
Outfall line	1,093
Estimated contract cost	6,168
Contingency (5 percent)	308
Supervision/inspection/overhead	324
Total	6,800

LIQUID WASTE DISPOSAL FACILITY, ROCKY MOUNTAIN ARSENAL, COLO.

Question. Provide additional details and justification on this project.

Answer. Ground water contamination at Rocky Mountain Arsenal (RMA) is the result of pesticide and herbicide manufacturing by Shell Chemical Company and toxic chemical agent production by the Army. These wastes leaking out of evaporation basins, have entered the sub-surface soil and ground water acquifer(s) and, in some instances, are migrating off the Arsenal in ground water. The pressure of Arsenal-generated chemical contaminants was discovered in surface waters and off post water wells in 1974. Issuance of Cease and Desist Orders by the State of Colorado initiated a crash program to eliminate the pollution problems. The cease and desist orders stated RMA must:

Stop discharges to the water of the State of Colorado.

Take immediate action to clean up all sources of chemical contaminants.

Initiate and continue a program of ground water surveillance to determine the extent of chemical contaminant migration.

Ongoing decontamination studies were expanded and expedited to provide early recommendations for corrective action.

DIMP (Diisopropylmethylphosponate) resulting from the manufacture of the agent GB and DCPD (Decyclopentadiene) resulting from Shell Chemical Company operations have been identified in groundwater crossing the Arsenal's boundary. The other most significant contaminant is a soil fumigant known to be a cause of sterility in male workers, and has been termed by EPA as a potent carcinogen.

Question. Explain the other "parts" of the "program".

Answer. The first major construction consisted of the fiscal year 1977 minor MCA funded Pilot Containment facility. This facility provided a groundwater barrier to intercept groundwater flow, a collection system on the RMA side of the barrier, treatment facilities to treat the groundwater and a recharge system to reinject the water into the underground stream. The fiscal year 1977 pilot facility demonstrated the feasibility of this approach.

The second construction effort consists of eliminating introduction of new contaminants into either ground or surface waters from current operations. As fiscal year 1977 exigent minor MCA project will redirect wastewater discharge from existing operations into holding tanks for processing in an existing spray dryer rather than continue to deposit waste into lagoons.

A third project in the fiscal year 1980 (PN34) MCA program, will supplement the fiscal year 1977 Pilot Containment Facility by extending the existing North boundary bentonite barrier, provide additional dewatering and recharge wells and expand the treatment facilities to handle the increased load.

A fourth project in the fiscal year 1981 (PN36) MCA program will provide full depth containment of Basin F by installing an impervious barrier entirely around the basin with dewatering and monitoring wells between the barrier and the basin. An enhanced evaporation system will accelerate evaporation within Basin F. An all-weather road will provide access around the contaminated area.

CENTRAL WASHRACKS, FORT CARSON, COLO.

Question. Why wasn't this done as part of the central wash facility previously authorized?

Answer. This project was separated out of the fiscal year 1979, PN 305, Central Vehicle Wash Facility prior to bidding resulting in a project scope reduction of 34 percent. Even with the scope reduction, the project CWE was over the programmed amount by 58 percent. A cost variation report required by sections 603(d) and (c) of Public Law 95–356 informing the Armed Services Committee that the project will exceed by more than 25 percent the amount authorized was submitted in July 1979. The cost variation report explained that the rigid pavement access roads were deleted prior to bidding and will be resubmitted in a future year. This fiscal year 1981 project is the resubmitted project.

Question. The requirement for the project is not clear. Provide additional justification.

Answer. This project will provide a paved access road from the new Track/Wheel Vehicle Wash Facility (fiscal year 1979, MCA Project 305) to the existing Consolidated Field Maintenance Facility. This project is needed to meet the requirements of Fort Carson's NPDES Discharge Permit No. 00–0000876, issued by the U.S. Environmental Protection Agency and the State of Colorado Department of Health. The proposed tank trail will support the washing operations of all tracked vehicular equipment used by the 4th Inf Div (Mech) and those of non-divisional units upon their return from down range training exercises. The average daily traffic has been determined to be 285 (165 track and 120 wheel) vehicles per day. The rigid track road will route track/wheel vehicles from the site of the wash facility to the 12 existing tactical equipment shops, to the 6 future tactical equipment shops and to the Consolidated Field Maintenance Facility.

The existing tank trail is not properly sloped to drain and lacks necessary culverts to permit proper drainage. The surface material consists of a sand-clay mixture that is expansive and tends to swell under moist conditions. The surface also becomes dusty during the dry summer and fall seasons. The resultant mud and dust tend to cling to the newly washed vehicles which necessitates their rewashing at the destination tactical equipment shop. The waste water then drains into the tactical equipment shop sewer system and causes failure to waste oil separators which are not designed for gross soil/petroleum product overloads. Upon failure of the oil separators, wastewater is discharged overland into surface drainage channels resulting in the violation of the 1977 Water Quality Standards established by the EPA, contained in the NPDES discharge permit and authorized by PL 92–500.

Question. Provide details of project scope.

Answer. The project consists of providing approximately 18,800 feet of 18-feet wide concrete pavement. The work will include relocation of electrical power lines and poles, site improvements, demolition of existing culverts and pavement, installation of road subbase drainage and site storm drainage system. A temporary tank trail will be constructed for use during construction of the permanent trail. This will include clearing, grading and soil stabilization and the installation of storm drainage culverts.

REGIONAL SEWER TIE-IN, FORT STEWART, GA.

Question. Why can't you use Section 603 authority on your fiscal year 1979 authorization?

Answer. Sufficient authorization is not available under the fiscal year 1979 Title I authorization to cover the increased costs for this project. A funding shortfall in fiscal year 1979 has resulted from cost escalation both in CONUS and overseas and the impact of dollar devaluation in overseas areas, therefor an additional appropriation is required.

Question. Are you delaying the project waiting for this additional authorization?

Answer. No.

Question. How much was authorized in fiscal year 1979?

Answer. The project was authorized for $6,133,000 in the FY–79 MCA Authorization Act.

Question. Don't you need authorization for the total cost if you are not going to use your fiscal year 1979 authorization?

Answer. No, the fiscal year 1979 authorization will be used, and these funds will be supplemented by the funds provided under this project to provide the cost of the Army's contribution to the regional system. A contract for the on-post portion of the work, for $620,000, was awarded in August 1979.

EMERGENCY POWER FOR SYSTEM COLLECTION, FORT DIX, N.J.

Question. How many times in the past 10 years have you experienced power outages that caused spills?

Answer. We have experienced power outages that resulted in sewage spills on 22 May 75, 14 Nov 76, 30 Jun 78, 29 Aug 78, 1 May 79 and 23 Mar 80. Others have occurred; however, our records prior to 1975 could not be retrieved in time to provide a timely response. The Ft. Dix NPDES permit requires stand-by power to assure continuous treatment of raw sewage. The three-day total outage (with partial outage for 15 more days) that occurred starting 29 Aug 78 resulted in a court order requiring the installation of stand-by power.

Question. Why can't you use portable generators that are moved to the site when you have a power outage?

Answer. The use of portable equipment is generally not acceptable because overflows occur before equipment, transportation and personnel can be mobilized and dispatched to control the overflow. In addition, more critical situations exist during power outages than sewage lift station failures requiring the attention of available personnel and equipment. The only way to assure no overflow of raw sewage is to have permanently installed stand-by power.

Question. How much of the project cost is in the cost of that generator?

Answer. Eleven diesel generators with varying voltage and KW ratings equipped with necessary ancillary equipment are estimated at $692,000. The remaining cost is for automatic transfer switches and utilities, contingencies, supervision and administration costs.

FORT KNOX, KY.

Question. Answer the same questions that were posed for the previous project (Ft. Carson, CO PN 323).

Question. Why wasn't this done as part of the central wash facility previously authorized?

Answer. The lack of excess or additional funds in the fiscal year 1979 MCA Authorization Bill was the reason cost variation procedures were not utilized to secure necessary additional funding over the programmed amount.

Question. The requirement for the project is not clear. Provide additional justification.

Answer. The proposed construction is essential to comply with Federal USEPA and KY water pollution standards. Ft. Knox is in violation of the U.S. Environmental Protection Agency National Pollution Discharge Elimination System (NPDES) Permit No. Ky 0002917. Under provisions of the NPDES permit, discharges from washracks are to be limited and continually monitored by Ft. Knox. Discharge limitation and monitoring requirements for vehicular and equipment cleaning facilities are for PH, oil and grease, suspended solids, phenol, biological oxygen demand (5 day), fecal coliform, and bacteria (no. per 100 ml). Present washing of tracked tactical vehicles is very inefficient. It has been observed that up to eight hours and 20,000 gallons of potable water is needed to clean one M60 tank under wet, muddy conditions. The present Ft. Knox washrack facilities do not comply with USEPA wastewater discharge requirements, waste large quantities of potable water, and reduce troop training time.

Question. Provide details of project scope.

Answer. This Fiscal Year 1981 project is the completion of facilities authorized in project 299, Fiscal Year 1979. Funds were not available to complete the entire project within the amount authorized by the Fiscal Year 1979 Military Construction Authorization Act. The work in this project includes the construction of one centralized vehicle wash facility for wheeled and tracked vehicles and the installation of oil separators and connection to the sanitary sewer for 11 existing remote vehicle wash pads.

Question. This process of incremental authorization has not been used in the past and the committee has frowned on the practice. Why are you proposing to start this year?

Answer. Funds were not available within the Fiscal Year 1979 Military Construction Authorization Act and the Military Construction Appropriation Bill for processing a reprogramming request for the project shortfall. It was decided to seek additional authorization and appropriation as a follow-on project.

Question. Will you need a road similar to the Ft. Carson Project?

Answer. No.

MISCELLANEOUS POLLUTION ABATEMENT, LONE STAR AAP, TEX.

Question. Provide a more detailed cost breakdown for Lone Star AAP PN 13

Answer.

Breakdown:	*Amount*
Spill control facilities for oil	$308,000
Disposal of contaminated waste from lagoons	1,021,000
Emergency power for lift station	117,000
Wastewater treatment facilities	957,000
Reclamation of area "O" pond	1,534,000
Subtotal	3,937,000
Plus contingency (5 percent)	201,000
Supervision and inspection (5 percent)	212,000
Total	4,350,000

VEHICLE/TANK WASH FACILITIES AND WATER POLLUTION CONTROL, SCHWEINHEIM, GERMANY

Question. Couldn't this project be done with troops?

Answer. This project cannot be effectively performed with troops. The complexity of mechanical equipment to be installed and stringent vertical controls required for concrete slopes are beyond troops expertise.

Question. What would be the cost for troop construction?

Answer. Not applicable.

MILITARY OPERATIONS ON URBANIZED TERRAIN, FORT BRAGG, N.C.

Question. Will similar facilities be required at all other divisional posts?

Answer. Yes. The Army plans to construct eight additional facilities in the Continental United States, two per year, starting in fiscal year 1983 through fiscal year 1986, to be located at Forts Hood, Lewis, Campbell, Carson, Riley, Stewart, Polk and Ord.

TACTICAL EQUIPMENT SHOPS AND FACILITIES, FORT BRAGG, N.C.

Question. What is the solar component of this project?

Answer. A combined domestic hot water and space heating system is the solar component of the project.

Question. What were the results of the solar system analyses?

Answer. The preliminary solar energy study indicated that a combined domestic hot water and space heating system estimated to cost $90,000 to be cost effective. In addition, the study indicated that a combined domestic hot water, space heating and air conditioning system providing a larger percentage of the annual energy requirements to be marginally cost effective. Further study revealed that the larger system, estimated to cost $640,000 was not cost effective.

BARRACKS MODERNIZATION, FORT BRAGG, N.C.

Question. Design has not started on this project. Why?

Answer. Project was added to the program in November 1979 at the direction of the Office, Secretary of Defense. Design will be completed by April 1981.

Question. How can you have any confidence in the cost estimate?

Answer. Confidence in any estimate is based on the amount of design completion and information available at the time the estimate is prepared. It is reflected in the percentage of construction contingencies added to the project. Projects with less confidence require more contingency allowance. Percentage of contingency in MCA projects range from 5 percent to 10 percent. This project has been assigned to 10 percent contingency because of the unforeseen items of work which could occur during the construction phase.

COMPANY ADMINISTRATIVE/SUPPLY ARMS BUILDING, FORT CAMPBELL, KY.

Question. What is the solar component of this project?

Answer. The solar component currently under design is domestic hot water system.

Question. What were the results of the solar analysis?

Answer. The preliminary solar study indicated that the domestic hot water system to be cost effective and a combined heating and air conditioning system to be marginally cost effective. The estimated cost of the combined system was $313,000. Further study revealed that the combined heating and air conditioning system was not cost effective. The cost effective domestic hot water is estimated to cost $25,200.

Question. Where did you get the cost of $9.07/SF for solar?

Answer. The unit cost of $9.07 per square foot was developed on early programing data by the Army using data published in July 77, page 44 of Heating/Piping/Air Conditioning/Journal. Using national average prices for the components of a solar system the calculations resulted in the unit cost of $9.07/sf on a ratio of total building area. This initial cost data will be adjusted based on actual design costs, savings and cost benefits as determined by the design agency in later stages of design development.

FORT CARSON LAND ACQUISITION

Question. I note that you are not indicating any land acquisition for fiscal year 1982. I thought you had that issue under active study. Where does it stand?

Answer. The Army is actively studying the need for additional land to meet the field training requirements of Army elements located at Fort Carson. We now propose to file the Final Environmental Impact Statement and announce the preferred site alternative in the fall of 1980. Should the decision be made to acquire additional land, a land acquisition project may be included in the fiscal year 1982 MCA budget.

FORT CARSON HOSPITAL, COLO.

Question. I note that you have programmed the new hospital for fiscal year 1982. What is the status of design and what is the design schedule? Could this schedule be speeded up or incremented to permit start of construction prior to October 1981?

Answer. The first stage of design (siting and block layouts) is proceeding rapidly at an accelerated level. The normal concept design time has been compressed by several months. The project schedule is as follows:

Item:	*Date*
A/E contract audit completed	5 Feb. 1980
Notice to the A/E to proceed with concept design	21 Feb. 1980
Concept design complete	20 Sep. 1980
NTP final design	20 Nov. 1980
Final design	7 Sep. 1981
Advertise	5 Oct. 1981
Open bids	5 Dec. 1981
Award of project	31 Dec. 1981

The above is a compressed (accelerated) design schedule and any further compression will significantly increase the chance for design errors and omissions and should not be considered.

Question. If the hospital were included in the fiscal year 1981 budget, could the cost be reduced and the completion speeded up? Provide for the record a cost estimate for fiscal year 1981 authorization versus the currently planned fiscal year 1982 authorization. Also provide for the record comparative construction schedule (Gantt charts) for authorization in fiscal year 1981 versus fiscal year 1982.

Answer. The design of the hospital should not be realistically considered for inclusion in the fiscal year 1981 program. The design schedule is presently compressed to a point that breaking out in incremented contract packages would not provide any appreciable time savings and may further provide problems having two contractors at the site at the same time which could lead to construction delays and increased construction costs.

Question. What is the scope of the hospital as it is being designed?

Answer. This project is being designed as a station hospital (Community Hospital) of 195 beds. The scope of the project is 509,616 gross square feet.

FORT CARSON HOSPITAL, FORT CARSON, COLO.

Question. Are there any "strings" on proceeding with the construction of this hospital (e.g., is there any connection with Fitzsimons)?

Answer. There are no "strings" which will impede or delay the construction of a new Fort Carson Hospital. The Department of Defense has directed the Army to re-examine the future mission of Fitzsimons Army Medical Center but has also specifically stated that the Fort Carson project can and should no longer be delayed pending a resolution of the Fitzsimons issue.

SPECIAL WEAPONS SHOP, FORT CARSON, COLO.

Question. What is the purpose of this facility?

Answer. The purpose of this facility is to provide for secure and adequately sized maintenance and storage facility for special weapons at Fort Carson. The facility will be used to store and maintain special weapon trainers and associated classified training materials for use by certain 4th Infantry Division units stationed at Fort Carson, and selected National Guard units from an eight state area. In addition, certain classified instruction will be conducted in this facility.

Question. What do you mean by "special weapons"?

Answer. Classified.

Question. Do you now store or handle nuclear and/or chemical weapons on Fort Carson?

Answer. Classified.

TACTICAL EQUIPMENT SHOPS AND FACILITIES, FORT CARSON, COLO.

Question. Why is there no solar component to this project?

Answer. The engineering/economic study for this project indicated that a solar energy application was not cost effective, hence no solar component.

BUILDING MODIFICATIONS, FORT DOUGLAS, UTAH

Question. I thought you were closing Fort Douglas. Do you need this project?

Answer. On 28 June 1978 the Army announced its decision to close and excess Fort Douglas by end Fiscal Year 1981, except for certain facilities (Buildings 100, 102, and 103) required for the 96th Army Reserve Command, nine subordinate Reserve units, and a maintenance activity. These funds are required to provide adequate permanent facilities and a separate utility system for the Army Reserve Center. The Army is also retaining the post cemetery and is transferring the US Naval/Marine Corps Reserve Center to the Department of the Navy. Approximately 98 acres of land, 66 sets of family housing units, and 55 administrative/storage buildings are excess to the Department of the Army and Defense needs.

Question. If this is for the Reserves, why isn't it in Title VIII?

Answer. The purpose of the realignment of Fort Douglas was to achieve cost savings to the Active Army by closing and excessing the major portion of the installation. This required the consolidation of Reserve activities located throughout the installation into one area. This project provides for the rehabilitation of the buildings to be occupied by the Reserve activities, and is a necessary investment to achieve the Active Army savings. Therefore, the decision was made to place the request in Title I.

Question. Design hasn't started. Why is this request in for fiscal year 1981?

Answer. In effecting the realignment of Fort Douglas, the Army will realize significant benefits through avoidance of operating costs for 66 sets of family quarters and 55 other buildings, reduction in civilian and military manpower requirements, and reduction in administrative overhead costs. By including the project in the fiscal year 1981 program, the Army will be able to realize the cost benefits of the realignment at an earlier date. If the project is deferred to the fiscal year 1982 program, the project cost can be expected to increase roughly 10 percent. We now expect to have project design completed in November 1980, with contract award made during the second quarter of fiscal year 1981.

FORT DRUM, N.Y.

Question. Representative McEwen has requested the addition of a 300-man barracks at $4.25 million. You don't even show such a project in your out-year program. Do you need it?

Answer. Stationing of an engineer battalion at Fort Drum, New York is currently scheduled to be completed by the end of 1983. After completion of that action, Fort Drum will have a requirement to house approximately 530 permanent party, unaccompanied enlisted personnel. Current adequate assets, including the barracks for 300 personnel now under construction, will provide for 400 personnel. A deficit of space for 130 personnel will remain. Fort Drum experiences an average unaccompanied enlisted transient load of approximately 200 personnel (winter training from November through February, and Reserve Component training support from April through October). When the stationing action is completed the combined permanent party and transient requirements will justify construction of an additional barracks for 300 personnel.

Based on current estimates, the addition of a barracks wing for 300 personnel to the barracks and dining facility now under construction will cost approximately $4,250,000. It is anticipated that award of a construction contract could be accomplished 8–9 months after design is initiated.

Question. What is the status of design?

Answer. The design of this project has not started yet. However, the existing design of a 300-man barracks will be used with minor modifications. As such the design period required is about 2–3 months.

CONVERSION OF BUILDINGS TO CID LABORATORY AND ADMINISTRATION SPACE, FORT GILLEM, GA.

Question. How many people will move from Fort Gordon to Fort Gillem when this project is completed?

Answer. A total of 70 spaces (34 military/36 civilian) are expected to relocate to Fort Gillem. An additional seven military students undergoing a two-year laboratory training program will also be relocated.

Question. Isn't there an alternative to the oil-fired system?

Answer. The project involves a small heating system with an energy requirement far below that which would be practical to serve with coal or other alternate source of energy.

DIVISION HEADQUARTERS AND OPERATIONS BUILDING, FORT HOOD, TEX.

Question. Isn't there an acceptable alternative to the gas-oil heating plant?

Answer. Size of the heating plant is below the size which would be considered for a coal-fired operation. However, the project does include use of supplemental energy from solar collectors.

CHILD CARE CENTER, FORT HOOD, TEX.

Question.

(a) Why has the cost of this facility gone up $450,000 since last year?

(b) Why is the solar system an "additive alternative?" Is it cost effective? Is the cost included in the amounts shown in the estimate?

(c) Provide a revised cost for this facility including the solar system. Answer.

(a) The cost of this child care center went up because of the following reasons:

(1) Building was resited requiring unusual foundations and longer utilities runs.

(2) Increase in construction cost growth due to inflation from fiscal year 1980 to fiscal year 1981.

(b) The solar system cost was not included in the project programmed amount. The project was designed with a conventional thermal energy supply system, and separately with a combined conventional-solar energy system, which is advertised as an additive alternate. If the bids are favorable and the solar energy system can be secured within available funds, it would be accepted. The project is cost effective (as defined by Section 804 of the Military Construction Authorization Act). The cost of the solar system is not included in the amounts shown in the estimate.

(c) The final analysis of the solar system indicated that the solar system was not cost effective, and design of the solar system has been stopped. The total project cost for this facility without the solar system is $2,000,000.

ROAD WEST FORT HOOD TO TURKEY RUN ROAD, FORT HOOD, TEX.

Question. Provide a map showing the road proposed and comparing the new route to current routes.

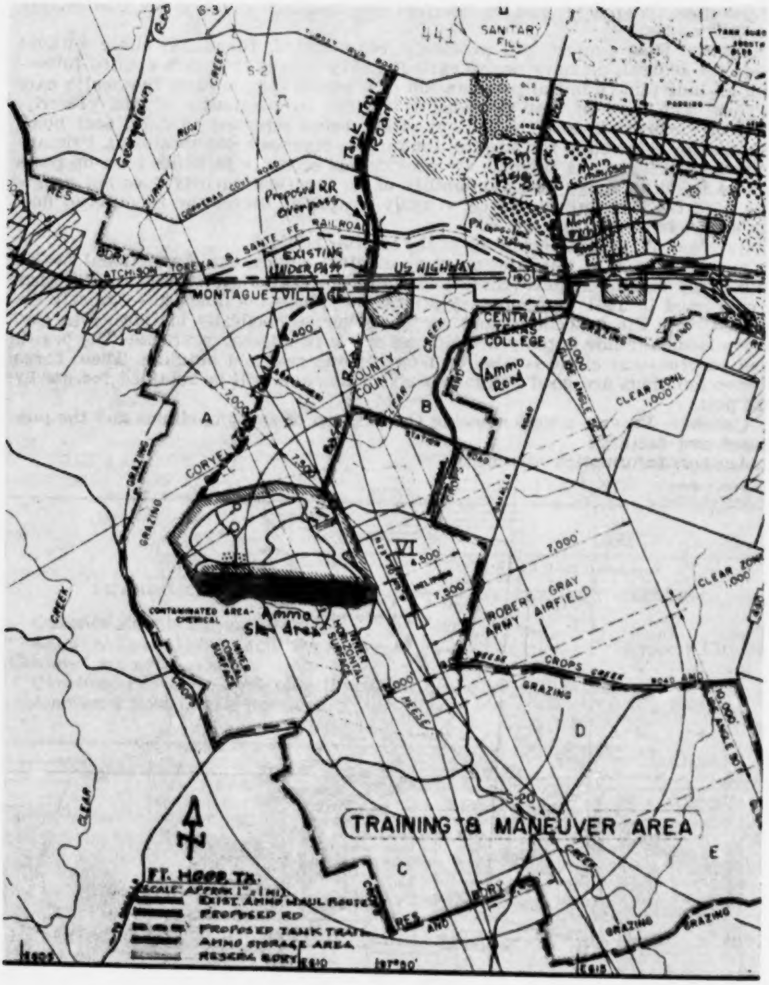
Answer. Requested information is provided on the attached map.

Question. Couldn't much of this project be accomplished by troops (actives or reserves) construction forces?

Answer. Certain portions of this project, such as a portion of the road and tank trail construction are within the capability of active/reserve troop construction units. However, in neither case are these units available to complete a project of this magnitude in a timely manner. Smaller scale construction and maintenance and repair projects, predominately O&MA funded lend themselves to troop construction, due to both their magnitude and the fact that they allow the units time to accomplish other competing and mandatory combat training requirements. Additionally, the use of reserve component units for a project of this size would be plagued by discontinuity, since they are only available for less than a two week period at a time.

Question. What would be the cost of project if done by troop reserves?

Answer. An accurate cost estimate cannot be accomplished without having the type troop unit identified. If the unit designated did not have required equipment, the equipment would have to be obtained or a contractor used to accomplish some tasks. If units or soldiers had to be brought in from other locations, then temporary duty payments would have to be added to the cost estimate.


SANITARY FILL
441
Georgetown Rd
Tank Trail Road
Proposed RR Overpass
ATCHISON TOPEKA & SANTE FE RAILROAD
EXISTING UNDER PASS
US HIGHWAY 190
MONTAGUE VILLAGE
CENTRAL TEXAS COLLEGE
Ammo Road
CLEAR ZONE 1,000'
A
B
C
D
E
CORYELL COUNTY
BELL COUNTY
GRAZING
CROPS
CONTAMINATED AREA-CHEMICAL
Ammo Str Area
INNER HORIZONTAL SURFACE
CONICAL SURFACE
ROBERT GRAY ARMY AIRFIELD
7,000'
7,500'
4,500'
TRAINING & MANEUVER AREA
FT. HOOD TX.
SCALE: APPROX 1" = 1 MI.
EXIST. AMMO HAUL ROUTE
PROPOSED RD
PROPOSED TANK TRAIL
AMMO STORAGE AREA
RESERV. BDRY
97°50'

TROOP MEDICAL CLINIC, FORT ORD, CALIF.

Question. Will this project go on at Fort Ord or at Hunter-Liggett?

Answer. The clinic will be located on Fort Ord.

Question. I'm not sure I agree that one central clinic is more convenient to patients than smaller clinics near their troop area. Justify consolidation.

Answer. A consolidated clinic has several advantages over the existing widely dispersed arrangement. These include:

Lower Capital Costs.

Decrease in staff requirements permitting increases in professional and ancillary utilization.

Minimal number of referrals from one clinic to another.

Reduced transportation requirements for patients, staff supplies, and equipment.

Question. Why don't you do many of the functions planned for this facility in the hospital?

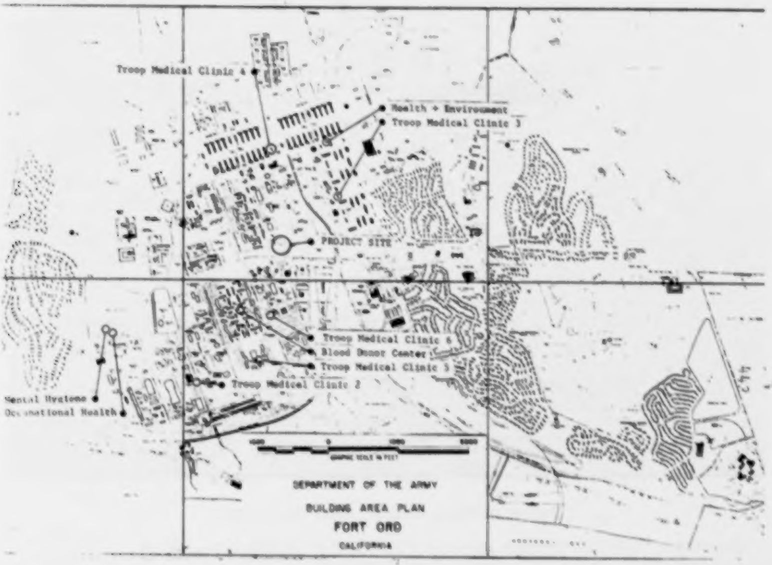
Answer. This project will provide a consolidated, functional clinic without beds for general, primary health care. Primary care is that care applied following an individual's initial presentation of a health complaint to the health care system. The level of care provided is typified by diagnostic efforts, prescription of medication, and the patient either being returned to duty, sent home for rest, or referred to the hospital for further diagnosis and treatment. Primary care facilities such as this one are provided as separate facilities even on posts where hospitals exist. The availability of an inpatient facility does not negate the need for this project, which, roughly compared, serves the function of doctor's office in the civilian sector.

Question. What is the condition of the existing clinics?

Answer. Three of the existing troop medical clinics, the occupational health clinic, the mental hygiene clinic and the blood center are housed in buildings constructed in 1941 as temporary structures. These buildings have greatly exceeded their life expectancy and are no longer economically maintainable. One troop medical clinic is ten years old and one is twenty-one years old. The health and environment clinic is also in a twenty-one year old building. These three newer buildings are good permanent structures and will be retained for use by the post.

Question. Provide a map showing the location of existing clinics and the proposed new facility?

Answer. Information attached.


Troop Medical Clinic 4
Health + Environment
Troop Medical Clinic 3
PROJECT SITE
Troop Medical Clinic 6
Blood Donor Center
Troop Medical Clinic 5
Troop Medical Clinic 2
Mental Hygiene
Occupational Health
GRAPHIC SCALE IN FEET
DEPARTMENT OF THE ARMY
BUILDING AREA PLAN
FORT ORD
CALIFORNIA

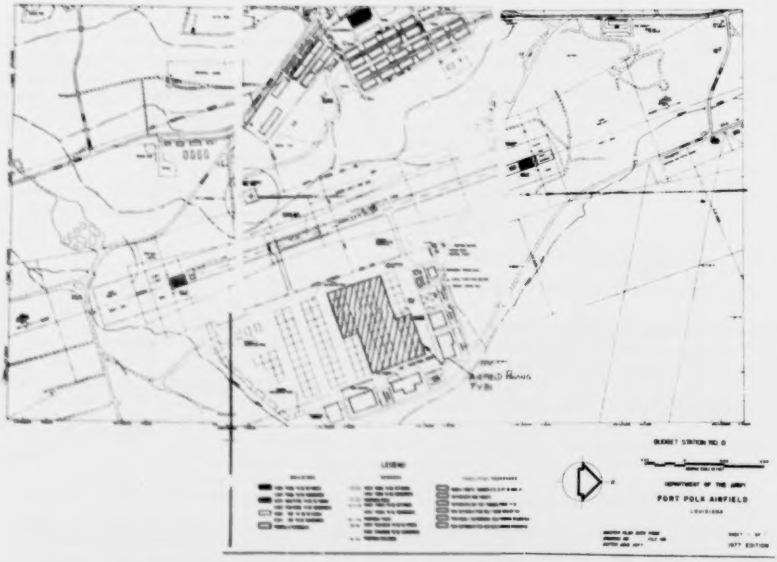
AIRFIELD PAVING, FORT POLK, LA.

Question. The scope of this is not clear. Provide a plan of the airfield showing the area to be paved.

Answer. The scope of the pavement is generally as shown on the attached plan.

Question. Are you going to overlay with asphalt? Won't you have fuel spillage problems.

Answer. Pavement construction will consist of portland cement concrete. There will be no asphalt concrete overlay. There should be no fuel spillage problems with portland cement concrete.


Airfield Parking FY 81
LEGEND
DEPARTMENT OF THE ARMY
FORT POLK AIRFIELD
LOUISIANA
1977 EDITION

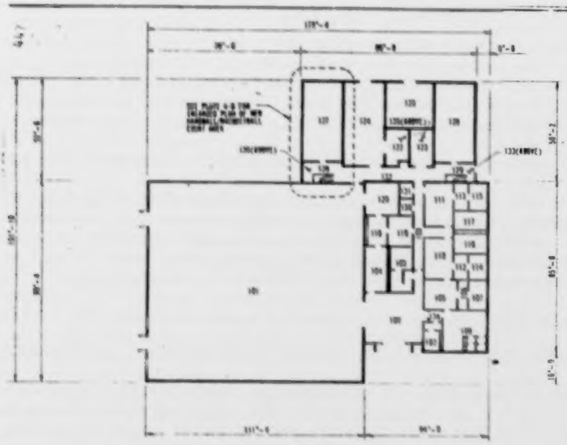
PHYSICAL FITNESS CENTER, FORT STEWART/HUNTER ARMY AIRFIELD

Question. Is this a gymnasium?

Answer. Yes. All the facilities shown in this submission as "Physical Fitness Centers" are gymnasium.

Question. Provide a floor plan that identifies space utilization.

Answer. A floor plan is provided.


179'-0
90'-0
80'-0
9'-0
130(ABOVE)
133(ABOVE)
101
100
101'-0
90'-0

ROOM SCHEDULE

SPACE NO.	SPACE NAME	AREA SQ. FT.
100	LOBBY	789.5
101	GYMNASIUM	10,642.0
102	WOMEN	128.0
103	MEN	239.5
104	OFFICE	242.0
105	TRAINER	244.0
106	COOL OFF	70.0
107	SAUNA	137.5
108	WOMENS LOCKER ROOM	482.0
109	CORRIDOR	388.0
110	LOCKER ROOM	291.5
111	LOCKER ROOM	291.5
112	DRYING ROOM	90.0
113	DRYING ROOM	90.0
114	SHOWER ROOM	125.0
115	SHOWER ROOM	125.0
116	TOILET	148.5
117	TOILET	148.5
118	LAUNDRY	145.0
119	ISSUE	197.5
120	STORAGE	265.5
122	STORAGE	277.5
123	STORAGE	224.0
124	EXERCISE	983.0
125	MECHANICAL ROOM	536.0
126	HANDBALL-RACQUETBALL COURT	810.0
127	HANDBALL-RACQUETBALL COURT	810.0
128	STAIRWAY	
129	STAIRWAY	
130	JANITORS CLOSET	49.0
131	CLEAN GEAR	49.0
132	CORRIDOR	677.0
133	SPECTATORS GALLERY	175.0
134	VESTIBULE	34.5
135	MECHANICAL ROOM	520.0
136	SPECTATORS GALLERY	212.0

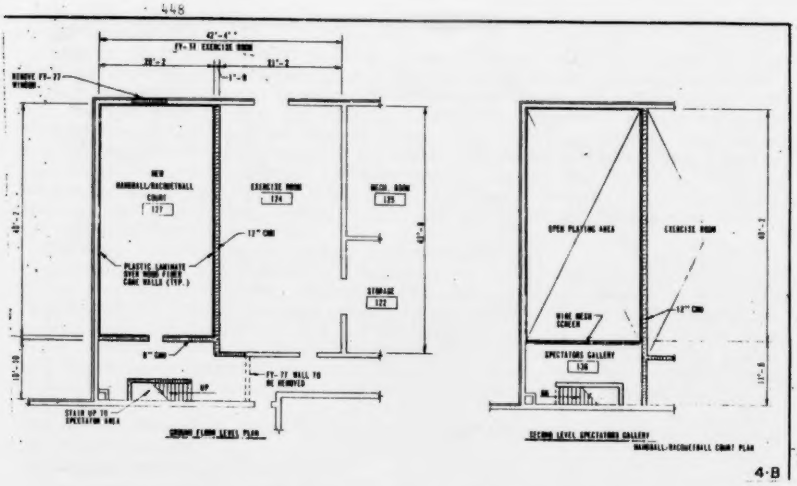
GROSS BUILDING AREA .... 21,030 S.F.

GYMNASIUM FLOOR PLAN

4-A

Gymnasium L.I. 188, FY-81 Ft. Stewart, Georgia

448


42'-4"
FY-77 EXERCISE ROOM
20'-2
21'-2
1'-0
REMOVE FY-77 WINDOW.
NEW HANDBALL/RACQUETBALL COURT
127
EXERCISE ROOM
124
MECH. ROOM
125
12" CMU
PLASTIC LAMINATE OVER WOOD FIBER CANE WALLS (TYP.)
STORAGE
122
8" CMU
FY-77 WALL TO BE REMOVED
UP
STAIR UP TO SPECTATOR AREA
GROUND FLOOR LEVEL PLAN
40'-2
10'-10
42'-8
OPEN PLAYING AREA
EXERCISE ROOM
WIRE MESH SCREEN
12" CMU
SPECTATORS GALLERY
136
11'-8
SECOND LEVEL SPECTATORS GALLERY
HANDBALL/RACQUETBALL COURT PLAN
4·B

CONVERT BARRACKS TO OUTPATIENT CLINIC, FORT BELVOIR, VA.

Question. Is there currently a shortage or an excess in barracks space at Fort Belvoir? How much?

Answer. There is no shortage of barracks spaces at Ft. Belvoir. An excess of 357 spaces exists.

TRAINING FACILITY UPGRADE, FORT BENNING, GA.

Question. Couldn't this project be done by troops?

Answer. Portions of this MCA project such as renovating the training range are within the construction capability of troops. The troops are normally fully occupied on smaller OMA construction/maintenance projects. This is a relatively large project that will require assembling a large work force for an extended period of time. If the troops were shifted to the MCA project civilian construction workers would have to be hired to perform the OMA construction/maintenance work vacated by the troops. Considerable resistance is normally voiced by local labor organization and construction management organizations when large MCA projects are performed by troops. The same objections are not normally made when troops perform small scale construction/maintenance and repair requirements funded by OMA.

Question. Provide a revised cost estimate for this project if accomplished by troops.

Answer. An accurate cost estimate cannot be accomplished without having the type troop unit identified. If the unit designated did not have required equipment, the equipment would have to be obtained or a contractor used to accomplish some tasks. If units or soldiers had to be brought in from other locations, then temporary duty payments would have to be added to the cost estimate.

SMALL ARMS MAINTENANCE AND STORAGE FACILITY, FORT BENNING, GA.

Question. Why do you need such a large facility? You are doing the job now in half the space.

Answer. The current building does not have sufficient space to allow for proper segregation and identification of weapons. In addition, existing space does not provide for an efficient work flow in the issuance and receipt of the weapons. The situation hampers the issue process to the extent that units sometimes begin arriving at 4 a.m. to assure weapon availability at 9 a.m. An industrial engineer study of December, 1977 has verified the space requirements.

CARGO HANDLING TRAINING FACILITY, FORT EUSTIS, VA.

Question. Design on this project was started five years ago. Why has this project not been programmed previously?

Answer. Design of this project was begun with the intent of including it in an earlier program. It was added to the fiscal year 1979 program by the Senate Armed Services Committee and was authorized but was not funded. The project continues to be a valid requirement, however it was not included in the fiscal year 1980 program due to budget constraints, and competing, higher priority Army construction requirements.

CARGO HANDLING TRAINING FACILITY, FORT EUSTIS, VA.

Question. Have you updated the cost estimate since 1977?

Answer. Yes. The cost estimate was updated 22 October 1979.

DENTAL CLINIC ALTERATION AND ADDITION, FORT LEAVENWORTH, KANS.

Question. Why has the requirement for DTRs gone from 21 last year to 24 this year?

Answer. There are three DTRs within the U.S. Army Disciplinary Barracks. These DTRs were not identified as part of the total installation requirement last year but are included this year. This action does not alter the size of the requested addition project.

Question. For fiscal year 1979 what percentage of the dental workload was related to dependents?

Answer. Approximately 45 percent of the total dental procedures in Fiscal Year 1979 involved dependents. However, 87 percent of these were relatively simple procedures such as examinations, X-rays, and cleanings. The majority of procedures performed on Active Duty personnel are more involved (root canals, fillings, dentures, etc.) and require most of the resources utilized. As a result of the project, the total number of dental treatment rooms at Fort Leavenworth will not exceed the number authorized for active duty only, in accordance with Department of Defense criteria.

RENOVATE ADMINISTRATION BUILDING, FORT LEAVENWORTH, KANS.

Question. Provide a copy of EO 11593 for the record and show why this project is required "to comply" with the EO.

Answer. Copy of EO 11593 is enclosed. Work is required in order to comply with the provisions of Section 2, Responsibilities of Federal Agencies, paragraph (d).

PRESIDENTIAL DOCUMENTS

TITLE 3—THE PRESIDENT

Executive Order 11593—Protection and enhancement of the cultural environment

By virtue of the authority vested in me as President of the United States and in furtherance of the purposes and policies of the National Environmental Policy Act of 1969 (83 Stat. 852, 42 U.S.C. 4321 et seq.), the National Historic Preservation Act of 1966 (80 Stat. 915, 16 U.S.C. 470 et seq.), the Historic Sites Act of 1935 (49 Stat. 666, 16 U.S.C. 461 et seq.), and the Antiquities Act of 1906 (34 Stat. 225, 16 U.S.C. 431 et seq.), it is ordered as follows:

SECTION 1. *Policy.* The Federal Government shall provide leadership in preserving, restoring and maintaining the historic and cultural environment of the Nation. Agencies of the executive branch of the Government (hereinafter referred to as "Federal agencies") shall (1) administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations, (2) initiate measures necessary to direct their policies, plans and programs in such a way that federally owned sites, structures, and objects of historical, architectural or archaeological significance are preserved, restored and maintained for the inspiration and benefit of the people, and (3) in consultation with the Advisory Council on Historic Preservation (16 U.S.C. 470i), institute procedures to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures and objects of historical, architectural or archaeological significance.

SEC. 2. *Responsibilities of Federal agencies.* Consonant with the provisions of the acts cited in the first paragraph of this order, the heads of Federal agencies shall:

(a) no later than July 1, 1973, with the advice of the Secretary of the Interior, and in cooperation with the liaison officer for historic preservation for the State or territory involved, locate, inventory, and nominate to the Secretary of the Interior all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for listing on the National Register of Historic Places.

(b) exercise caution during the interim period until inventories and evaluations required by subsection (a) are completed to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished or substantially altered. The agency head shall refer any questionable actions to the Secretary of the Interior for an opinion respecting the property's eligibility for inclusion on the National Register of Historic Places. The Secretary shall consult with the liaison officer for historic preservation for the State or territory involved in arriving at his opinion. Where, after a reasonable period in which to review and evaluate the property, the Secretary determines that the property is likely to meet the crieria prescribed for listing on the National Register of Historic Places, the Federal agency head shall reconsider the proposal in light of national environmental and preservation policy. Where, after such reconsideration, the Federal agency head proposes to transfer, sell, demolish or substantially alter the property he shall not act with respect to the property until the Advisory Council on Historic Preservation shall have been provided an opportunity to comment on the proposal.

(c) initiate measures to assure that where as a result of Federal action or assistance a property listed on the National Register of Historic Places is to be substantially altered or demolished, timely steps be taken to make or have made records, including measured drawings, photographs and maps, of the property, and that copy of such records then be deposited in the Library of Congress as part of the Historic American Buildings Survey or Historic American Engineering Record for future use and reference. Agencies may call on the Department of the Interior for advice and technical assistance in the completion of the above records.

(d) initiate measures and procedures to provide for the maintenance, through preservation, rehabilitation, or restoration, of federally owned and registered sites at professional standards prescribed by the Secretary of the Interior.

(e) submit procedures required pursuant to subsection (d) to the Secretary of the Interior and to the Advisory Council on Historic Preservation no later than January 1, 1972, and annually thereafter, for review and comment.

(f) cooperate with purchasers and transferees of a property listed on the National Register of Historic Places in the development of viable plans to use such property in a manner compatible with preservation objectives and which does not result in an unreasonable economic burden to public or private interests.

SEC. 3. *Responsibilities of the Secretary of the Interior.* The Secretary of the Interior shall:

(a) encourage State and local historic preservation officials to evaluate and survey federally owned historic properties and, where appropriate, to nominate such properties for listing on the National Register of Historic Places.

(b) develop criteria and procedures to be applied by Federal agencies in the reviews and nominations required by section 2(a). Such criteria and procedures shall be developed in consultation with the affected agencies.

(c) expedite action upon nominations to the National Register of Historic Places concerning federally owned properties proposed for sale, transfer, demolition or substantial alteration.

(d) encourage State and Territorial liaison officers for historic preservation to furnish information upon request to Federal agencies regarding their properties which have been evaluated with respect to historic, architectural or archaeological significance and which as a result of such evaluations have not been found suitable for listing on the National Register of Historic Places.

(e) develop and make available to Federal agencies and State and local governments information concerning professional methods and techniques for preserving, improving, restoring and maintaining historic properties.

(f) advise Federal agencies in the evaluation, identification, preservation, improvement, restoration and maintenance of historic properties.

(g) review and evaluate the plans of transferees of surplus Federal properties transferred for historic monument purposes to assure that the historic character of such properties is preserved in rehabilitation, restoration, improvement, maintenance and repair of such properties.

(h) review and comment upon Federal agency procedures submitted pursuant to section 2(e) of this order.

RICHARD NIXON.

THE WHITE HOUSE.
May 13, 1971.

[FR Doc. 71-6951 Filed 5-14-71; 12:18 pm]

NOTE: For the text of a Presidential statement issued in connection with E.O. 11593 above, see Weekly Comp. of Pres. Docs., Vol. 7, issue of May 17, 1971.

Question. The cost is very high. For this amount you could build a new facility of comparable size. Was an economic analysis done? If so, give the results.

Answer. A new facility of comparable size could be constructed at a lower cost. An economic analysis was not made since a historic structure is involved. Economics was not a consideration.

PETROLEUM STORAGE FACILITIES, FORT LEONARD WOOD, MO.

Question. Are you considering converting your heating plants to coal?

Answer. All major heating plants are being considered for conversion to coal, but the plants at Ft. Leonard Wood are not included in the higher priority candidates. However a refuse fired heat recovery incinerator is presently under design. (Fiscal year 1980)

Question. How much would such conversion cost?

Answer. The cost of converting heating plants to coal has not been determined as of this time. Further studies are being conducted.

TACTICAL EQUIPMENT SHOPS AND FACILITIES, SCHOFIELD BARRACKS, HAWAII

Question. Why is there no solar component for this project?

Answer. Heating and air conditioning not required for this facility. A solar energy application to the domestic hot water system was not cost effective.

TRIPLER ARMY MEDICAL CENTER, HAWAII

Question. The 1391 says another project is programmed for fiscal year 1983 to upgrade the remaining portions of the existing hospital. The 1390 shows no such project. Which is correct?

Answer. The project to upgrade the remaining portions of the existing hospital was inadvertantly omitted from the DD Form 1390.

Question. Are you incrementing this project? Is what you have requested a complete and useable facility?

Answer. The fiscal year 1981 Project will produce a complete and useable facility and therefore is not an increment of the fiscal year 1983 project. However, both projects represent valid requirements to correct existing deficiencies.

Question. U.S. Army Western Command, Tripler Army Medical Center, Hawaii, P. 152. Provide details on the new heating plant. What fuel will it burn, what size boilers, etc.? Did you consider a total energy system?

Answer.

(1) No heating system is required except for the areas where temperature control is critical. These areas will be heated by the waste heat recovered from the air conditioning chiller units.

(2) Diesel oil will be used for the generators and No. 5 fuel oil for the boilers.

(3) This project provides a central energy plant which will consist of two emergency generators (1,200–1,500 KW each), air conditioning chiller units (total 3,000 tons), and three steam boilers (2.68 Mil BTU/hr. each). The boilers are provided to back-up the solar system and to generate steam for the emergency air conditioning system.

(4) A study for a total energy system was made. However, the system was proven not to be cost effective; commercial power will be utilized.

Question. What portion of the patient load is for other than DOD patients? Are these other agencies contributing to the project cost? Why?

Answer. Approximately 15 percent of the average daily patient load is generated by other federal beneficiaries—Veterans Administration, Public Health Service, etc. These agencies are not contributing to the construction cost. Consideration was given to making the project a jointly funded venture but was rejected since these agencies reimburse DOD for services received based on an interagency reimbursement schedule approve by OMB.

IMPROVE LIGHTING INDUSTRIAL BUILDINGS, ROCK ISLAND ARSENAL, ILL.

Question. Has an economic analysis been done on this project?

Answer. The project results form a need for increased illumination for industrial activities, and there is no record of an economic analysis.

Question. Will there be any energy saving?

Answer. The project results from a need for increased illumination for increased intensity is expected to offset most of the energy savings.

ALTER BUILDINGS FOR HEADQUARTERS FACILITY, ROCK ISLAND ARSENAL, ILL.

Question. Provide details on the other increments of this requirement.

Answer. The proposed project is the first increment of the total requirement consisting of three increments. The second increment consists of alterations to Building 108, Building 109, and Building 110 with support utilities (chilled water lines and electrical distribution). The third increment consists of alterations to Building 102 and Building 103 (and paving).

ALTER BUILDINGS FOR HEADQUARTERS FACILITY, ROCK ISLAND ARSENAL, ILL.

Question. Compare the cost of this project and the remaining increments with the estimated cost at the time of the January 1977 announcement.

Answer. The Case Study and Justification Folder, File No. 321, which was the basis for the armament community realignment, identified construction required at Rock Island Arsenal. This construction was to alter 250,000 gross square feet (GSF) in six buildings, including 500 tons of air conditioning. Subsequently, Rodman Laboratories relocated to Picatinny Arsenal, New Jersey. This move evacuated building space which was superior to that previously identified for alteration in support of the armament realignment. Therefore, three of the original buildings were substituted with space vacated by the Rodman Laboratories. Also, a requirement surfaced to renovate administrative space for the single service conventional ammunition management function. A revised project was developed which identified the alteration of 350,000 GSF, including 1,000 tons of air conditioning. In testimony during the spring of 1977, the Army stated that work related to the realignment was $2.8 million of an $8.1 million project for facilities at Rock Island. The additional cost of the project was due to other requirements at the installation which are not attributable to the armament community realignment. The project was originally planned for fiscal year 1978 but was deferred due to the budgetary reasons until fiscal year 1981. It was then divided into three phases as indicated below:

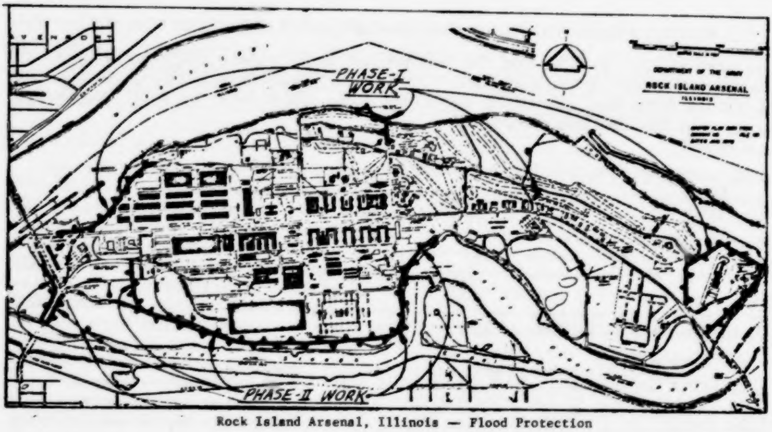
	Millions
Phase I—fiscal year 1981	$4.9
Phase II—fiscal year 1982	6.5
Phase III—fiscal year 1983	2.8
Total	14.2

The principal causes of the increase in cost from $8.1 million to $14.2 million are the inflationary factor over the five-year delay, and final refinements of design.

FLOOD PROTECTION, ROCK ISLAND ARSENAL, ILL.

Question. Provide a plan showing this project and the second increment.

Answer. Plan is attached.



Rock Island Arsenal, Illinois — Flood Protection

Question. Why are you incrementing this requirement? Does this project provide a complete and useable entity?

Answer. The project was broken into phases because of funding constraints. Phase I will provide a useable project. The island is high down the center so Phase I will provide design protection on the Mississippi River side, exclusive of the golf course portion.

Question. Provide details on the second increment.

Answer. Phase II will provide protection for the Sylvan Slough side of the island from just upstream of the arsenal power dam to the downstream end of the island.

Question. Why can the requirement for Rock Island not be handled under the Congressionally authorized Civil Works Project? Provide details on that civil works project to include any language that specifically precludes protection of federal facilities.

Answer. The Rock Island, Illinois Civil Works project is providing a high degree of protection against Mississippi River floods for the city of Rock Island. The area being protected contains about 870 acres of extensive industrial commercial and residential development. These developments are located in the heart of the city of Rock Island. Approximately $7.5 million have been expended on this project through the current fiscal year and the project is now completed.

The Rock Island Arsenal is physically separated from the mainland area by the Sylvan Slough. This stream acts as a physical barrier to incorporating flood protection for the arsenal with the Rock Island project. If the island were developed with non-government facilities, flood protection for the island would still be considered separately.

It is the general policy of the Corps of Engineers not to provide separable flood protection for military installations using civil works funds. It is not desirable that military projects compete with civil works projects for funds since different criteria are used to evaluate each type of project.

Question. Why is the contingency 10 percent?

Answer. A 10 percent construction contingency was used for this project because of the high level of risk associated with this project. The risks include the following:

(*a*) Continuously fluctuating water levels.

(*b*) Spring and Summer flooding levels.

(*c*) Limited earthmoving contractor competition in the Rock Island Arsenal area.

(*d*) Soft riverbank working conditions such as piers, floatime, etc.

(*e*) Earthwork which traditionally incurs more contingencies because of the unforeseen subsurface.

HEALTH AND DENTAL CLINIC, U.S. ARMY ST. LOUIS SUPPORT CENTER, ILL.

Question. The justification for this project is not clear. Provide a breakdown of the active duty population that would be served by this facility. Explain why it differs from that shown on the Form 1390. Show how the total beneficiary number in the 1391 was computed.

Answer.

A. By category of active duty beneficiaries:

Army	1, 136
Navy	139
Air Force	114
USMC	59
Coast Guard	415
Total	1, 863

B. By Units or Activities and Military strength:

Agency	*Military strength*
U.S. Army Health Clinic, SLASC, Granite City, Ill	8
USA Dental Clinic, SLASC, Granite City, Ill	2
USA Dental Clinic, 12th & Spruce St., St. Louis, Mo	2
208th MP Det, 12th & Spruce St., St. Louis, Mo	5
USA Recruiting Main Sta., 12th & Spruce St., St. Louis, Mo	187
USA Advisor GP, 102 ARCOM, 5900 Kennerly Ave., St. Louis, Mo	12
ROTC, Washington University, Box 1206, St. Louis, Mo	1
DARCOM IG, 4300 Goodfellow Blvd., St. Louis, Mo	15
USA Criminal Investigation, SLASC, Granite City, Ill	3
U.S. Army Readiness GP, 4300 Goodfellow Blvd., St. Louis, Mo	64
Headquarters Detach, SLASC, Granite City, Ill	44
50th Ord Detach, SLASC, Granite City, Ill	7
USA Enlisted Eligibility, 9700 Page Blvd., St. Louis, Mo	3
USA Reserve Comp Personnel, Admin Center, 9700 Page, St. Louis, Mo	356
U.S. Army Communications Cmd, 4300 Goodfellow Blvd., St. Louis, Mo	10
DARCOM Automated Logistics, Management System Act, 210 N. 12th St., St. Louis, Mo	11
USAF Sr. Advisor, 131 st TAC, FTR, Wing MOANG, Lambert Field, St. Louis, Mo	2
U.S. Armed Forces Exam and Ent, 12th & Spruce St., St. Louis, Mo	12
USAF Recruiting Cmd, 12th & Spruce Sts., St. Louis, Mo	44
AF ROTC Det 207, Parks College, Cahokia, Ill	8
USAF, Advisor, MOANG, 1 Grant Ave., Jefferson Bldg., St. Louis, Mo	3
Defense Mapping Agency, Aerospace Center, 2d & Arsenal St., St. Louis, Mo.	60
Defense Contract Admin, Services Region, 1136 Washington Blvd., St. Louis, Mo	18
U.S. Army Aviation Research and Development Cmd, 12th & Spruce St., St. Louis, Mo	82
U.S. Navy Recruiting Dis, 210 N 12th St., St. Louis, Mo	107
USA Engineer Dist (CE), 210 N 12th St., St. Louis, Mo	3
2d U.S. Coast Guard Dis. 1430 Olive St., St. Louis, Mo	415
USMC Recruiting Station, 210 N 12th St., St. Louis, Mo	43
U.S. Navy Training Center, Lambert Field, St. Louis, Mo	32
USMC Reserve I-I Staff, 80 INF BN FMF, Lambert Field, St. Louis, Mo	16
Army Medical Department, Personnel Procurement, 12th & Spruce St., St. Louis, Mo	2
U.S. Army Troop Support and Aviation Material Readiness Cmd, 4300 Goodfellow Blvd., St. Louis, Mo	269

C. The strength figures shown in block 6 of the DD Form 1390 for St. Louis Support Center, represent only those military personnel assigned to U.S. Army Materiel Development and Readiness Command located on the St. Louis Support Area Installation at Granite City. These figures do not include the remainder of the 1,863 Active Duty Military who are stationed in the St. Louis area and are supported by this clinic.

D. The total beneficiary number in the 1391 was computed as shown:

Active Duty	1,863
Retired	15,090
Dependents of Active Duty	3,722
Dependents of Retired/Decreased	27,782
Civilians	287
Total	48,744

Question. What other health care facilities are there in the St. Louis area?

Answer. The American Hospital Association Guide Issue for 1979 indicates that there are twenty-two general medical and surgical hospitals, which are not federally owned in St. Louis, Missouri. There are three similar hospitals in East St. Louis, Illinois and one hospital in Granite City, Illinois. There is one acute and one long-term Veterans' hospital in St. Louis. The Public Health Service operates a health and dental clinic in St. Louis. This facility was considered in the economic analysis for the project. It was determined that the PHS clinic is inadequately sized to support the Army workload. There are also six federally operated occupational health clinics in the St. Louis area. These occupational health clinics provide extremely limited health services to civilian employees of the Federal government, in what is typically a small office staffed by a registered nurse or a licensed practical nurse. The civilian and Veterans' Administration hospitals in the St. Louis area provide inpatient care to the acutely ill. The closest Department of Defense facility is at Scott Air Force Base some 27.5 miles or 45 minutes to an hours drive from Granite City.

It should be noted that the proposed project will provide a consolidated, functional clinic, without beds, for general, primary medical and dental care. The type of care is typified by an individual's initial presentation of a health complaint to the health care system. The level of care to be provided in this facility is typified by diagnostic effort, often prescription of medication and the patient either being returned to duty, sent home for rest or referred to a hospital for further diagnostic work or treatment. Primary care facilities, such as the one provided by this project, are provided as separate facilities on many installations where hospitals exist. The availability of an inpatient facility does not negate the requirement for this clinic project.

Question. How many doctors and dentists are now assigned to the existing facility?

Answer. There are presently three physicians and two dentists in the existing facilities.

Question. Provide fiscal year 1979 workload data for the record. Break out the clinic visits and dental procedures by category of beneficiary.

Answer: During the fiscal year 1979 there were 147,879 clinic visits broken out as follows:

Army AD	3,291
Navy-Marine AD	97
Air Force AD	39
Other AD	35
Dependents AD	6,677
Dependents Ret/Dec	2,803
Retired	1,705
Other	232

During fiscal year 1979 there were 31,832 dental procedures broken out as follows:

Army AD	18,323
Navy AD	3,522
Air Force AD	763
Dependents	2,591
Other	6,633

Question. With the scattered nature of St. Louis military facilities, couldn't health and dental care be best provided on the civilian economy (CHAMPUS)?

Answer. Granite City is presently the site of the inadequate health and dental facilities proposed for replacement. It is also the site of other military community support activities such as the commissary and the exchange. The proposed project is therefore located in the travel pattern of the population supported.

The Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) is a program under which the government shares the cost of authorized medical care received from civilian sources by spouses and children of active duty service members, retired service members, spouses and children of retired service members, surviving spouses and children of deceased active duty. CHAMPUS does not cover active duty service members. Additionally CHAMPUS does not provide for dental care to any category of beneficiary. There are 1,863 active duty service members in the St. Louis area.

Question. Provide a summary of the Economic Analysis showing the alternatives studied and the relative costs.

Answer. The Economic Analysis examined six alternatives: a. The proposed project to construct a new clinic, b. Renovation and addition to the current clinic, c. Shifting of workload to Scott Air Force Base Medical Facility, d. GSA rental of space at Federal Center, Goodfellow Avenue, e. Co-location of the Army Clinic with an existing Public Health Service Clinic in St. Louis, f. Contract for care with a Health Care provider. Three of the alternatives were not costed. It was determined that: a. GSA rental at Goodfellow is not feasible due to security and parking problems, b. Contracting with Health Care provider is not reasonable because of problems in contracting with civilian health care providers on an indemnity basis, c. Public Health Service Clinic co-locatioin is not possible due to inadequate available space. The remaining three alternatives were evaluated considering six factors: a. Comprehensiveness of care, b. Availability of care, c. Cost of care to the government, d. Mobilization capacity, e. Impact on Civilian Providers, f. Impact on demand for military medical resources, g. Operating efficiency.

The proposed clinic project represents the preferred alternative based on the Economic Analysis. The Life Cycle cost and annual cost of the three costed alternatives follow:

	Life cycle cost	Annual cost
Alternative:		
New clinic	$8,724,092	$348,964
Renovation/addition to existing clinic	8,803,722	352,149
Scott AFB medical center	9,829,864	393,195

MATERIEL DEVELOPMENT AND READINESS COMMAND, TOOELE ARMY DEPOT, UTAH

Question. Discuss the requirement for the security upgrade project. Why is it being deferred until later years,

Answer. The security upgrade project is required to conform to regulatory guidance on the security of conventional munitions. The project consists of a general security upgrade at multiple sites to include 120,000 linear feet of fencing with cleared areas on each side. Intrusion Detection Systems (IDS) in 600 structures (ammo igloos and buildings), warning signs, security lighting, and required supporting facilities. Based on the overall priority of this project in relationship to other critical Army requirements, the project could not be accommodated within the fiscal year 1981 funding level.

RESTORE 'C' LINE NITROCELLULOSE PRODUCTION FACILITIES: RADFORD AAP, VA.

Question. What caused the 2 November 1978 explosion?

Answer. The nitrocellouse centrifuge funnel became plugged with nitrocellulose (reason unknown) and detonated.

Question. Has the current line been "fixed" to preclude similar explosions?

Answer. Yes. The funnel and monitoring controls have been modified and retested to prevent a recurrence.

ELECTROMAGNETIC ENVIRONMENTAL TEST FACILITY, FORT HUACHUCA, ARIZ.

Question. Have you done an economic analysis on this report, Is it more cost effective to continue operations with the existing contractor?

Answer. Yes, an economic analysis has been done. Based strictly on dollar-quantifiable considerations, construction of the proposed facility appears to be slightly more costly than continuing to operate with contractor-owned facilities. The calculated savings to investment ratio at the end of a 25-year period is 0.92. However, this ratio does not reflect important non-quantifiable benefits and considerations. Construction of the proposed facility will greatly enhance the efficiency and responsiveness of the contractor's operation by facilitating daily interaction with his customer—the Electronic Proving Ground. In addition, Army Electronic Proving Ground's master instrumentation plan to improve development testing of communication, command and control/intelligence (C^3I) systems, referred to as MAINSITE, will be enhanced by having the proposed facility located at Fort Huachuca. Finally, the fact that the incumbent contractor owns the only suitable facility in the Tucson-Fort Huachuca area to accomplish electromagnetic environmental testing has effectively eliminated competition from the bidding process, and will undoubtedly result in higher costs. Accordingly, the Army considers this project to be prudent, justified and cost-effective when all factors are considered.

Question. Isn't there any alternative to the gas-fired heating plant?

Answer. Coal would not be economically feasible for the relatively small heating plant required for this facility. However, it is planned that some of the energy will be developed from solar sources.

ELECTRIC POWER DISTRIBUTION SYSTEM, PHASE IV, FORT RITCHIE, MD.

Question. Is this the final phase of this program?

Answer. Yes, this fourth phase is the final phase of this program.

ALTER BUILDING FOR RESEARCH ANIMAL HOLDING, FORT DETRICK, MD.

Question. The cost of his project is extremely high. Why does it cost so much to renovate for animal holding?

Answer. The cost of renovation appears high but the amount of work to be done in Building 1412 includes removal of the existing two story high steel test chambers, framing and extension of second floor, and alterations to first floor. New construction includes compartmentation for animal holding areas, and addition of 125 ton, 100 percent make up air, air-conditioning system. Considering the amount of rehabilitation work to be done and the environmental and health criteria requirements for this facility the cost per square foot is not excessive.

Question. Hasn't a new animal research facility been built here in the recent past?

Answer. The current Building 1421 was built in 1958 and there have been no others since.

FROST EFFECTS RESEARCH LABORATORY

Question. For the past 5 years, how much research has this lab done for military programs versus civil works programs?

Answer. Research at the Cold Regions Research and Engineering Laboratory for the past five years was as follows:

[In thousands of dollars]

	Fiscal year—					
	1976	1976 Transition	1977	1978	1979	1980
Military	3,982	1,171	5,308	5,591	6,638	6,116
Civil	2,049	469	2,247	3,315	3,994	2,971
Other	1,631	404	2,206	2,883	1,634	1,028
Total	7,662	2,044	9,761	11,789	12,266	[1] 10,115

[1] At the end of March 1980.

Question. Will this new facility be used exclusively for military research programs?

Answer. The Frost Effects Research Facility will be primarily dedicated to military research in soil engineering, but it will be available for use by Federal

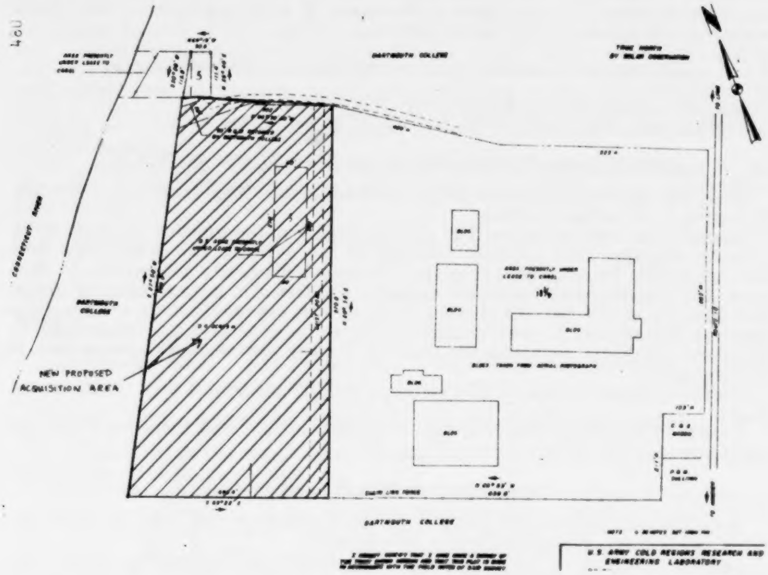
Highway Administration research programs and other programs as the schedule permits.

Question. Wasn't there a new ice engineering lab built at CRREL within the past few years? Provide details on this facility?

Answer. The Ice Engineering Facility was built at CRREL in 1978 using Civil Works funds. It provides the capability for large scale investigations in ice/water engineering. A 120 foot flume and test basin is used to develop criteria for structures exposed to ice action, ice booms, air/water bubbles, ice sheets, etc. A refrigerated test area allows large scale modeling of ice problems on rivers. It has no capability for conducting soil research.

Question. Why do you need to acqure land? Provide a plan showing land to be acquired. Who owns the land now?

Answer. The 9.4 acre parcel included in line-item authorization is required because no Army-controlled land is available to site the new facility. It is proposed to negotiate with the owner, Darmouth College, to purchase the property at fair market value. A plan of land to be acquired is attached.



DARTMOUTH COLLEGE
TRUE NORTH BY SOLAR OBSERVATION
DARTMOUTH COLLEGE
NEW PROPOSED ACQUISITION AREA
BLDG
BLDG
BLDG
BLDG
BLDG
DARTMOUTH COLLEGE
U.S. ARMY COLD REGIONS RESEARCH AND ENGINEERING LABORATORY

Question. Discuss the status of negotiations to date with Darmouth to acquire this land.

Answer. Informal discussions with college officials reveal that the college is unwilling to lease the land to the Army at nominal rental. In view of this position, the only alternative remaining to the Army is to purchase the land. Formal negotiations to purchase the land will not be initiated until the project is authorized and appropriated by the Congress.

EIGHTH U.S. ARMY, KOREA

Question. Your request for Korea is quite high. Have you taken into account the possibility that the 2nd Division may be withdrawn?

Answer. Yes, we have—as stated earlier in the answer to Question 1, page five.

Question. List the Korea major construction projects in order of priority.

Answer. All of the Korea fiscal year 1981 MCA projects were submitted as part of the Army's minimum case program and support either plant replacement of seriously deteriorated facilities or mission essential operational or contingency requirements. Lack of MCA funding will dictate large cost ineffective expenditures of O&M funds with little relief to the current poor conditions. The Command supported priority list for EUSA fiscal year 1981 MCA is as follows:

Priority/Project:	($(*MCWE*))
1. Milk Plant, K16	3.950
2. Tactical Equip Shops, 2ID	10.400
3. Upgrade Water System, 2ID	9.900
4. Barracks, UNACOM Off HSG, 2ID	15.500
5. Electrical Upgrade, Yongsan/K16	1.250
6. Flammable Storage, Cp Carroll	2.750
7. Elev Water Storage, Cp Henry	0.700
8. Gen Purpose Warehouse, Cp Carroll	0.590
9. Liquid Fuel Storage, Waeguan	12.000
10. Acft Hangar Addn, K16	0.860
11. Physical Fitness Center, Cp Walker	1.804
12. Instl Standby Power, Cp Walker	0.210
13. Instl Standby Power, Pusan	0.150
14. Upgrade Sewer System, K16	0.520

Additionally, the Army Surgeon General has requested, as part of the medical program, a Dental Clinic at Yongsan (Seoul) with a CWE of $1.850 million.

Question. What exactly is the status of the withdrawal of forces from Korea? Provide for the record the President's statement in that regard and the Army's interpretation of that statement.

Answer. An interagency reassesment of Korea withdrawal plans was completed in 1979 which led the President to announce, on 20 July 1979, another modification to the withdrawal schedule. Withdrawals of combat elements of the 2d Infantry Division will remain in abeyance. Between now and the end of 1980, however, 1526 support spaces will be withdrawn to include one I-HAWK battalion. In addiion, two provisional TOW companies will be inactivated, and their assets transferred to the Koreans. [Deleted.]

In addition, long-term planning calls for inactivation and transfer of equipment of a second I-HAWK battalion in [deleted] and a third in [deleted]. These limited space reductions will not have a measurable effect on the military balance in Korea.

With respect to US ground force withdrawals from the Republic of Korea, the President decided that:

Withdrawals of combat elements of the Second Division will remain in abeyance. The structure and function of the Combined Forces Command will continue as established in 1978.

Between now and the end of 1980, some reductions of personnel in US support units will continue. These will include one I-HAWK air defense battalion.

The timing and place of withdrawals beyond these will be reexamined in 1981. In that review, the United States will pay special attention to the restoration of a satisfactory North-South miltiary balance, and evidence of tangible progress toward a reduction of tensions on the peninsula.

There is very little room for interpretation because the actions we will take are clearly stated. Withdrawals of combat elements of the 2d Infantry division will be held in abeyance. There will be some reductions in support units, to include one I-HAWK battalion. Finally, the timing and pace of future withdrawals will be reasessed in 1981.

In this reassessment, special attention will be placed on the restoration of a satisfactory North-South military balance, and evidence of tangible progress toward a reduction of tensions on the Korean peninsula. Accordingly, the timing and pace of future withdrawals are dependent upon a significant number of variables and cannot be accurately predicted. For programing and budgeting purposes, the Army is assuming the presence of the division in Korea at least through the current POM cycle (1982–86).

Question. Can any of the Korea projects be done by troops to reduce cost?

Answer. Theoretically, the two battalions of the 2nd Engineer Group in Korea would have the capability of performing work on some of those fiscal year 81 projects calling for prefabricated construction, horizontal earthwork or pavement type construction. In practice, however, the engineer units are at reduced strength with shortages in key technical specialties necessary for the more sophisticated MCA type work. The available capability is already heavily back-loged in support of high priority Army and Air Force O&M and urgent minor MCA requirements. To commit a sizable part of the 2nd Engineer Group to the fiscal year 81 MCA would require both a major restructuring of workload and a need to resort to contract construction for those key operation and contingency projects to which they are already committed.

Question. Has the ROK been asked to fund any of these projects?

Answer. No. Thus far the ROKG has not, within the cost sharing umbrella, agreed to support the construction of facilities related to the internal operations of the US military service components. This reality will require the continued support, at least for the short term, of those type projects reflected in the Army's FY 81 Korea MCA submission.

Although the Host Nation Support dialogue is continuing, the Republic of Korea Government (ROKG) currently provides construction support to US Forces Korea via three distinct programs. The first of these programs is a Quid Pro Quo (QPQ) and is derived from ROKG requirements for real estate occupied by US forces. In return, the ROKG has provided badly needed replacement facilities often times at locations which support the objective of base consolidation. The program presently consists of the following projects with an estimated 1980 cost of construction to the US government for an equivalent scope of work:

	Millions
(*a*) Relocation of 504th Sig Bn and other activities from Kimpo Airport to facilitate construction of new International Air Terminal	$13.0
(*b*) Local relocation of US post activities at Pusan to facilitate expanded commercial port development	14.5
(*c*) Relocation of supply point 51A out of downtown Seoul to facilitate urban development	16.0
(*d*) Relocation of NAIJA Rest and Recreation Center in Seoul to facilitate highway construction	11.6
(*e*) Relocation of Camp Page to allow industrial development in vicinity of Chunchon City	11.6
(*f*) Relocation of Chinhae Naval Detachment	1.5
(*g*) Relocation of POL pipeline in vicinity of Kunsan AFB	4.4
Total	72.6

[Deleted.]

The third program consists of 1,085 ROKG subsidized build-for-lease family housing units at Seoul, Taegu, and adjacent to Osan AFB. These rent controlled units will be leased to the U.S. Government at a lesser cost than the potential cumulative housing allowance outlay and far less than the total burden to military families were they forced to enter into private leasing arrangements. Consideration of prevailing inflation rates would escalate this figure appreciably over time. The US government construction costs for an equal number of quarters would be $80 million.

At the 12th Annual US-Korea Security Consultative meetings held in October 1979 the issue of expanded host nation support, of which construction is but one part, was raised by the Secretary of Defense. As a result of agreements reached at this session HQ, US Forces Korea is currently developing detailed objectives for the potential expansion of HNS [deleted].

TACTICAL EQUIPMENT SHOPS, KOREA

Question. If the 21D were withdrawn, how many of the camps in paragraph 11 would remain?

Answer. Should the 21D eventually be withdrawn from Korea the camps listed in paragraph 11 would ultimately be returned to control of the ROK government. However, such a potential withdrawal would be phased, and it is anticipated that the particular camps in question would be utilized by US forces at least through the late 1980's. The extreme deterioration of existing facilities has forced the Army to program replacement. By utilizing metal prefabricated structures we are attempting to retain the flexibility to either relocate the structures to residual installations or return the building component's to storage.

MILK PLANT, K-16 EIGHTH U.S. ARMY, KOREA

Question. The cost of this project has more than doubled in two years. Why?

Answer. The original project was based on concept project design. In process of further development of project design and review by a U.S. dairy process technical representative, numerous design changes were found necessary and costs were increased. The cost increase can be attributed to (1) Increase for land fill previously to be provided free by Korean school and moved by troop labor (offer now withdrawn); (2) Increase due to two years project deferral because of high inflation, approximately 25 percent per year, being experienced in Republic of Korea; (3) Increase due to requirements needed to meet U.S. heal code standards, not anticipated at concept.

Question. Discuss the alternatives to this project to include the economics.

Answer. One alternative to the project would be to fly the milk products into Korea from Okinawa or other Pacific locations. The cost of accomplishing this is over $200,000 per month so this is not an economical alternative.

A second alternative would be to assume that there was a Korean contractor that was willing to provide milk products for US Forces. We would not expect the product to be delivered at a significantly lower price than the current $1.14 per quart charged on the Korean market. Reasons for this are two-fold: First the Korean contractor would have to build and equip a separate facility for none of the existing facilities meet US health standards. The current cost of borrowing money in Korea is in excess of 33 percent per annum. Milk products would have to be procured outside of Korea as local milk does not meet US health standards. Second, the Korean contractor would not have any decrease in labor costs over those currently being incurred by this command because Korean Labor laws require that Korean contractors hire all personnel, with the same wages and benefits, when the U.S. Government converts from direct-hire to in-direct hire for services and/or products. Based on average monthly production in gallons, the operation of a US plant would result in a cost savings of $803,520 per year. Based on this savings, the plant would amortize in approximately 4.9 years. Troop issue accounts for 69 percent of the workload of the plant. Based on just the workload related to troop issue, the new plant would amortize in approximately 7.1 years.

A third alternative would be to compare the existing plant with the new plant. The existing plant is labor intensive and inefficient. The current plant employs 125 local national employees. It is estimated that there will be a reduction of 30 percent of the current employees, resulting in 38 less employees for the new plant. This would result in a decrease of $300,000 per year for the new plant in personnel costs. Using a straight line approach the new plant would amortize in 13 years. If the increased pay requirements as currently scheduled in the local national employees pay schedule is included in the calculation, the amortization time would be reduced from approximately 13 years to 5 years.

The requirement for the plant is not expected to decrease in the foreseeable future as it is sized to the needs of the Army, Air Force and State Department personnel who would be in any residual force.

The construction of a new plant as requested in the 1981 Army Military Construction Program is the most cost effective solution.

FLAMMABLE STORAGE WAREHOUSE, CAMP CARROLL, KOREA

Question. Design of this project started in August 1978. Don't you know yet whether it will be block or pre-engineered construction?

Answer. The facility has been designed with concrete masonry block walls, and reinforced concrete frame and slabs.

Question. The scope seems excessive. Can't you continue outside storage with fencing for some of the materials?

Answer. Materials to be stored in this building includes commercial chemicals, decontaminating agents anti-freeze, cleaning compounds, battery acid, insecticides, herbicides, alcohol, paint, solvent and packaged lubricants. The combined value averages approximately $3.5 million. Character of these items prevents typically efficient storage practices. Small quantities of items often cannot be consolidated into one location because of compatibility problems, while large quantities frequently require increased distance between non-compatible items.

Much of this material is not packaged to withstand exposure to existing weather conditions and special packing for routinely issued stocks would be unjustified. Some items react unfavorably to prevalent temperature extremes. These conditions, combined with the high pilferage potential of most of the material, considerably reduces reliability of these supplies.

PHYSICAL FITNESS CENTER, EIGHTH U.S. ARMY, KOREA

Question. Will Camp Walker remains if troop withdrawals proceed as previously planned?

Answer. Yes. Camp Walker is planned to remain as a residual installation and will retain its operational mission independent of any potential future withdrawal of combat ground forces.

BARRACKS MODERNIZATION, NATIONAL MISSILE RANGE, KWAJALEIN, MARSHALL ISLANDS

Question. Is building 704 part of your "adequate" 666 spaces? The requirement line in para. 11 is not clear

Answer. Building 704 is not included in the 666 adequate spaces. These spaces are in five other smaller buildings.

Question. How long are contract civilian personnel assigned to KMR?

Answer. Assignments vary depending upon the specific contract and contract renewal provisions. It is estimated that the acreage length of stay is from 3 to 5 years.

Question. Why doesn't the contractor pay the cost of this upgrade?

Answer. Kwajalein Missile Range operates similar to a government owned contractor operated facility. The government furnishes all facilities in performance of contractor effort under a cost plus fee Research, Development, Testing and Evaluation (RDTE) financed contract. There are not other quarters available on Kwajalein Atoll.

DENTAL CLINIC, FORT CLAYTON, PANAMA CANAL ZONE

Question. Justify the requirement for a 29 DTR facility. How did you compute the requirement?

Answer. A total of 71 Dental Treatment Rooms (DTR) are required to serve the eligible population in Panama. This was determined using the Interim Criteria for Construction of DOD Dental Facilities (see formula below). Seventy percent of the population supported is located on the Pacific side which equates to 50 DTR's (71×.70=49.7=50). There are currently 18 adequate DTR's on the Pacific side which leaves a deficiency of 32 DTR's. The standard 28 DTR dental clinic plan was applied to satisfy this requirement.

Computation follows: *Dental Treatment Rooms Requirement:*

1. Installation: Panama Canal Zone.	
2. Population *x* factor—Estimated Procedures/Year:	
(*a*) Active Duty (7,512 times 24)	180, 288
(*b*) Dependents of Active Duty (11,000 times 24)	264, 000
Subtotal	444, 288
(*c*) Percentage (5%) allowance for retired and dependents of retired (444,288 times .05)	22, 214
(d) Total Allowable Procedures	466, 502
(*e*) Procedure/Month (466,502 divided by 12)	38, 875
3. Dental Manpower Requirements:	
(a) Procedures/Month: (DOD Criteria Chart) (Decision 38,875)	38
(*b*) Dental Provider Team:	
(1) General Dentists	22
(2) Specialists	16
(3) Hygienists	6
(4) Residents	0
(5) Expanded duty personnel	0
4. Support Staff Ratio:	
(*a*) Dentists (all types) times 2.5 (38 times 2.5)	95
(*b*) Expanded duty personnel times 1	0
(*c*) Total personnel required	95
5. Total DTR's Required:	
(*a*) 1.5 DTR's/General Dentists (22 times 1.5)	33
(*b*) 2.0 DTR's/General Specialists (16 times 2)	32
(*c*) 1.0 DTR's/Resident	0
(*d*) 1.0 DTR's/Hygienist (6 times 1)	6
(*e*) 0.5 DTR's/Expanded Duty	0
Total DTR's Required	71

DENTAL CLINIC, FORT CLAYTON, PANAMA CANAL ZONE

Question. By the time you could finish this facility there would be less than 20 years left in the treaty (about 17 years). Wouldn't it be more economical to renovate existing space?

Answer. Renovation and expansion was considered but not recommended for a number of reasons:

Economical and architectural constraints such as concrete walls and floors 12–18 inches thick.

Operational constraints such as no central oral evacuation system.

Numerous fire, safety and environmental code violations.

Functional constraints such as existing DTR's only six feet wide.

In addition, no expansion space is available due to the consolidation of units in the Fort Clayton area. The space currently occupied by the dental clinic is already ear-marked for administrative use by units moving into Fort Clayton.

EXCHANGE WAREHOUSE, FORT CLAYTON, PANAMA CANAL ZONE

Question. Will Panama agree to lease back the facility you are in now?

Answer. The warehouse needed by our exchange service must have capacity and configurations to receive, store and distribute efficiently a very wide range of merchandise to include high value and pilferable items requiring security, foodstuffs requiring freezer storage and refrigeration storage, and other items requiring humidity control space. The possibility of leasing back the warehouse (Bldg. 1009) now being used by the Army and Air Force Exchange Service was pursued with authorities in Panama in mid-1978. The response was negative. Although we are not privy to Panama's plans for use of this area, our observations of activities in buildings already turned over to the Panama government indicate they have uses for these facilities. Result of investigations for leasing a warehouse in the private sector have also proved negative. There was no warehouse space available on the Panamanian economy of the size and type necessary to meet the exchange service's needs. I understand that it is common practice for businesses in Panama to construct their own warehouses when such a facility is required.

Question. List the Germany major construction projects in order of priority.

Answer. The lowest priority major construction projects for Germany are:

Project	*Cost ($M)*
Barracks Complex with Heating Plant, Bamberg	16.500
Battalion Headquarters and Classroom, Bamberg	.750
Vehicle Maintenance Facility, Bamberg	6.500
Dining Facility, Bamberg	2.250
Maintenance Facilities Modernization, Hohenfels	3.350
Subcaliber Tank Range, Bad Hersfeld	1.000
Vehicle/Tank Wash Facilities, Aschaffenberg	1.050
Basic Load Site, Hanau	2.300
Simulated City, MOUT Facility, Hohenfels	3.750

The next list of projects would be those which were in the base level of the overall fiscal year 1981 Army program and are as follows:

Project	*Cost ($M)*
POL Hardstand and Facilities, Aschaffenberg	.520
Improve POL Handling Facilities, Fulda	1.500
Improve POL and Maintenance Facilities, Fuerth	1.360
Temperature Heat Recovery, Baumholder	2.300
Temperature Heat Recovery, Hanau	2.270
Temperature Heat Recovery, Giessen	2.500
Energy Monitor and Control, Karlsruhe	.840
Heat Plant Consolidation, Fuerth	.630
Child Care Center, Pirmasens	1.500
Maintenance Facility Modernization, Baumholder	14.000

The remaining projects were in the minimum case of the overall fiscal year 1981 Army program and are the highest priority projects.

U.S. ARMY EUROPE, GERMANY

Question.

(b) What was the exchange rate used in determining project cost estimates?

(c) What is the current exchange rate?

(d) Show how the exchange rate was factored into your project estimates?

(e) For each project show the current estimate based on the current exchange rate.

Answer.

(b) The exchange rate of 1.90DM/$1.00 U.S. Dollar was used to prepare the fiscal year 1981 project cost estimates. Later guidance to utilize a lower rate (1.78 DM/$) was received too late to revise the estimates for these projects.

(c) The current exchange rate per the Wall Street Journal, 20 March 1980, is 1.87 DM per $1.00 U.S. Dollar.

(d) The rate of exchange is factored into the project cost as follows:

Assume we are building a tactical shop in Germany. The basic U.S. Cost for a midpoint of construction of 1 October 1980 and location factor 1.00 (Wash D.C.) is $57.50/SF. For a similar facility to be built in Germany, with an exchange rate of 1.90DM/$1.00 we convert using a location factor 1.60 based on a rate of exchange of 2.00DM/$ to:

$$\$7.50\times1.60\times\frac{2.00}{1.90}=\$96.84/\mathrm{SF}$$

The unit price for the shop is then multiplied by the number of square feet of building required to arrive at the total cost for this facility.

(e) The current cost estimate for each fiscal year 1981 project based on 1.87DM/$ rate of exchange is included in attached table.

Question. Your request is more than double last year's authorization. Why?

Answer. The following table compares the amounts authorized in fiscal year 1980 and the amounts requested for authorization in fiscal year 1981 by construction category for USAREUR major construction.

[In thousands of dollars]

	Authorized fiscal year 1980	Requested fiscal year 1981
Construction category:		
Operations and training	17,500	20,530
Maintenance and production	30,900	106,550
Supply	3,020	22,080
Medical	5,750	21,850
Administrative	0	1,850
Housing and community	47,450	82,380
Utilities	2,320	3,970
Energy conservation program	14,680	8,540
Water pollution abatement	6,870	1,050
Total	128,490	268,800

The major increases are in providing maintenance, housing and community, supply and medical facilities. The facilities requested are to improve living and working conditions for our soldiers and to increase the operational readiness of units by providing adequate maintenance facilities for vehicles and ammunition upload facilities. The overall increases are based on the Army's assessment that it is essential to improve facilities for our soldiers.

Question. Has all of the construction been screened to insure it is compatible with the master restationing program?

Answer. The fiscal year 1981 Army military construction program has been screened by USAREUR and all projects are consistent with their restationing plan.

Question. List all projects for which necessary real estate is not now in hand and discuss the real estate situation.

Answer. Real estate has been obtained for all projects in the fiscal year 1981 program.

Question. The need for perpetual upload is not clear. I understand that pre-Vietnam units were uploaded, but incidents, pilferage, etc. forced ammunition to be returned to central stocks for better control. Under any scenario, won't you have some escalation period during which units could upload before the Warsaw Pact could attack?

Answer. It is true that uploaded ammo must be handled more frequently than downloaded ammo. However, quality control checks—technical inspections by ordnance personnel—have revealed a very satisfactory 1½ percent unserviceability rate for uploaded ammunition.

There have been no problems with pilferage. Strict physical security in accordance with DA and USAREUR regulations preclude pilferage.

The NATO standard response time requirement is for USAREUR units to be "in defensive positions" within [deleted.] Some key units (covering force and main battle force) have difficulty meeting this standard. The forward defense concept (defend close to FRG/GDR border) requires many units to travel great distance from garrison locations to wartime positions. Response time is exacerbated by the fact that basic load storage areas (BLSA) are often far from peacetime locations.

Regardless, uploading ammo saves time; time which can be devoted to preparation of defensive positions (emplacement of barriers, weapons, security forces, etc.), once the unit arrives at these positions. A defender in properly, well-prepared positions can withstand an attack from significantly larger enemy forces, than can a defender in poorly, hastily-prepared positions.

The escalation period, called the warning time/mobilization scenario, is not to be confused with the [deleted] response time. The warning/mobilization scenario is the basis for world-wide force and logistic sizing; the [deleted] response time is the ground commander's prudent requirement to ensure fast response to a worst-case, short-notice, WP attack.

BARRACKS LUCIUS D. CLAY KASERNE, GARLSLEDT, GERMANY

Question. I thought the FRG had agreed to build the necessary facilities at Garlstedt, why aren't they building this facility?

Answer. The agreement between the FRG and the U.S. was made in 1976. The scope of the construction included facilities sufficient to station a combat brigade with supporting units as they existed at that time. Since then the composition and number of the units stationed there has been modified due to changes in TO&E and force structure changes made throughout the Army. This project is for two new units an air defense artillery battery and a communications and electronics warfare company and was not included in the scope agreed to by the FRG back in 1976.

BARRACKS COMPLEX WITH HEATING PLANT, AMMUNITION DEPOT, BAMBERG, GERMANY

Question. What fuel are you planning for the power plant?

Answer. Coal is the intended fuel for this plant.

Question. How large is the plant?

Answer. The capacity of this plant is 15 million BTU per hour.

COMMISSARY WAREHOUSE, KATTERBACH KASERNE, ANSBACH, GERMANY

Question. Why can't this facility be built with commissary surcharge funds?

Answer. The House Committee on Armed Services' Report No. 95–125 (May 9, 1977) concerning the Military Construction Authorization for Fiscal Year 1978, contained the following language: "The committee will continue to consider requests in special cases for appropriated funds for commissaries outside the U.S., but it should be the goal of the Department to make the commissary system support its own capital improvement program."

The commissary warehouse at Katterbach Kaserne is currently located in diverted hangar space. The Aviation Requirements for Combat Structure of the Army plan necessitates use of this space by the 1st Armored Division Aviation Battalion to accommodate additional aircraft in support of improved combat readiness. Displacement of the commissary warehouse and the necessity for construction of a new one is considered to be a special case in consonance with the cited report.

Funding of the Katterbach Kaserne project with surcharge funds is not practical in view of the heavy backlog of commissary construction requirements already existing. After financing current programmed commitments, there is a backlog of 70 essential projects outside of the United States (estimated cost $185 million) and 56 essential projects within the United States (estimated cost $270 million). The total of 126 projects will cost $455 million. At the present rate of accumulation (approximately $13 million per year), this backlog would consume available surcharge funds for the next 35 years.

U.S. ARMY, EUROPE, TURKEY, VARIOUS LOCATIONS

Question. When will designs be completed?

Answer. Designs are scheduled to be completed August 29, 1980.

Question. What are your future construction plans?

Answer. MCA requirements in Turkey for the next five years consist primarily of projects to improve the living and working conditions of the Army units stationed at remote sites. The sites constructed in the mid-60's to austere NATO standards with a 10 year life are seriously deteriorated and require complete upgrade/modernization to bring them to an adequate standard which is still below that applied in the U.S. and Germany. Additionally, the NATO construction did not provide facilities for off duty activities such as sports, crafts, etc., so necessary in these areas which are located far from cities. The small, generally poor, towns near the sites provide little in the amenities available to soldiers stationed in Germany or the U.S. The phased program shown below, when completed, will provide minimum austere facilities at all the sites.

	Millions
Remote site upgrade (fiscal year):	
1981	$6.3
1982	13.75
1983	6.371
1984	6.121
1985	———
Other projects (fiscal year):	
1982	6.092
1985	4.199

CLASSROOM, CUSTODIAL SITES IN TURKEY (ERZURUM)

Question. Is the "barracks" part of this project to provide a "lounge"?

Answer. No, the barracks portion will provide housing facilities for 35 enlisted personnel. The classroom will provide classroom facilities. Since this is an isolated location, the classroom will be used during the evening for off-duty courses of instruction and allow the personnel to pursue self-improvement programs.

Question. Isn't this project mistitled?

Answer. Yes, a more appropriate title would be "Modernization of Barracks and Classroom".

OUTDOOR ATHLETIC FACILITY, FORT MYER, VA.

Question. Shouldn't this be built with NAF?

Answer. Since the Fort Myer Outdoor Athletic project ($170K) is a minor construction project, it can be built with either appropriated or nonappropriated funds.

BANKING FACILITY, FRANKFURT SHOPPING CENTER, GERMANY

Question. Shouldn't this be built with NAF?

Answer. The Banking Facility at Frankfurt, Germany should be built with appropriate dollars because it is a relocation for the convenience of the Government. The existing facility must be relocated from Headquarters V Corp to ensure security of that building.

MINOR CONSTRUCTION FACILITIES, ARMY INSTALLATIONS, VARIOUS LOCATIONS

KENNEL FACILITY, FORT MYER

Question. What use is made of sentry dogs in the Fort Myer area?

Answer. Three of the dogs are explosive detector dogs, one is a narcotic detector dog and the remainder are patrol dogs. The patrol dogs are used almost exclusively at night for normal police patrol duties at Cameron Station, Davison Army Airfield, Fort McNair and Fort Myer.

QUESTIONS SUBMITTED BY SENATOR GARY HART, ANSWERS SUPPLIED BY DEPARTMENT OF THE NAVY

Question. For fiscal years 1978, 1979 and 1980 provide a project listing showing:

(a) Amount authorized.

(b) Current Working Estimate.

(c) Project status (completed and closed out, completed and being closed out, under construction, under design, delayed, deferred, canceled).

(1) For projects under construction, indicate the estimated completion date.

(2) For projects under design, indicate the estimated date of construction award.

(3) For projects delayed, deferred or canceled, indicate the reason.

Answer. The information requested for the fiscal years 1978, 1979 and 1980 military construction projects has been provided and is available in the committee files.

CONSTRUCTION BACKLOG AND EXPENDITURES

Question. Last year you reported that your construction backlog was growing in constant dollar terms. Update your charts and discussions from last year's testimony.

Answer. The following table shows the total cost of projects included in the Military Construction Requirements List since fiscal year 1974. As indicated in last year's testimony these figures are constrained by the resources realistically expected to be available for military construction over the next five years and are thus not a valid indicator of the total military construction funds required. Other analyses are used for this purpose. For example, a study based on cost of ownership of the Navy plant valued at $47 billion in fiscal year 1981 dollars revealed that construction expenditures of $0.8 billion would be required each year to maintain the plant in its present condition. The study also revealed that the Navy has $18.3 billion in fiscal year 1981 dollars of facilities that are past their useful physical life. An orderly ten year program to construct replacement facilities including facility requirements generated by new missions and major directed initiatives such as energy conservation would require an average of approximately $1.8 billion per year. This study was based on the commercial premise that our existing physical plant is consumed as it is used and therefore must be replaced if the requirement for its use remains.

MILITARY CONSTRUCTION REQUIREMENTS LIST

[In billions]

	Total projects in Milcon requirements list	
	Then-year dollars	Fiscal year 1981 dollars[1]
Fiscal year program:		
1974	8.6	16.0
1975	8.3	14.2
1976	9.0	14.2
1977	7.9	11.1
1978	8.1	10.5
1979	8.9	10.5
1980	8.9	9.6
1981	10.3	10.3

[1] Then-year dollars were adjusted to fiscal year 1981 using engineering news record index of construction cost.

Question. Similarly update your testimony and charts from last year's transcript regarding construction expenditures.

Answer. The following table shows MILCON authorization in terms of actual fiscal year dollars and constant fiscal year 1981 dollars. In terms of purchasing power the table indicates the Navy's MILCON has in general terms been declining in the past five years. The fiscal year 1981 request includes the San Diego Hospital at $293 million. The request without the hospital would be $605 million and would make this the third lowest request in constant dollars in the last ten years.

MILCON AUTHORIZATION (NAVY)[1]

[In thousands of dollars]

	Actual	Fiscal year 1981
Fiscal year:		
1963	140,750	540,000
1964	202,988	763,000
1965	228,619	830,000
1966	324,899	1,153,000
1967	148,677	504,000
1968	471,781	1,566,000
1969	253,065	784,000
1970	314,677	874,000
1971	275,751	736,000
1972	325,836	766,000
1973	537,810	1,146,000
1974	619,682	1,152,000
1975	564,496	965,000
1976	705,509	1,115,000
1977	500,936	706,000
1978	453,654	585,000
1979	770,310	909,000
1980	459,490	496,000
1981 (requested)	898,110	898,110

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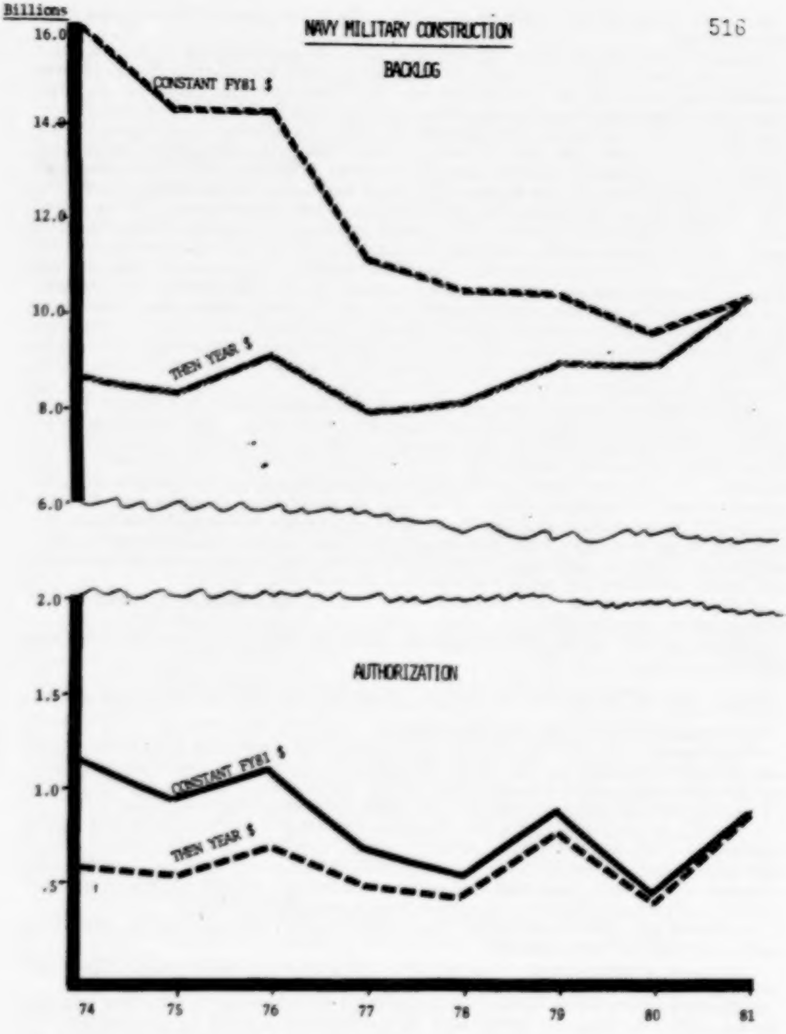
[1] Figures do not include family housing or naval reserve construction. Military construction in Southeast Asia during the Vietnam war is not included.

Question. Provide a graph showing construction backlog and construction expenditures both in constant and then-year dollars, identifying and discussing any anomalies.

Answer. The graph reflects that in constant dollars the backlog has steadily declined each year except for the current year. This downward trend is attributable to the Navy and Marine Corps' continual efforts to purge from the backlog those projects that are considered not competitive for funding within the next five years. The backlog increased in the current year primarily due to the Marine Corps identifying approximately $800 million in new projects for WESTPAC. These projects were added temporarily to the backlog pending a validation requirements review by the Marine Corps.

The authorization expressed in constant dollars reflects an erratic pattern and overall downward trend. The erratic pattern of the authorization can be attributed somewhat to the impact of efforts to control inflation in fiscal year 1977 and a construction moratorium in fiscal year 1978. The low authorization in fiscal year 1980 was due to a Navy decision to divert funds to higher priority items.



ENERGY

Solar

Question. Your request contains many projects which include solar systems. How did you determine which projects would include solar systems and what size the solar system would be?

Answer. A solar analysis was accomplished for each construction project where a potential to save fossil fuel existed. Economic analyses for solar systems were performed in accordance with the provisions of the fiscal year 1980 Military Construction Authorization Act and those systems which had a payback of 25 years or less were selected. Sizing of the solar system was accomplished using solar optimization computer programs which simulate year round performance.

Question. What is your opinion of Section 804 of last year's bill as it has been implemented?

Answer. Basically, we have two criteria which we are working under for solar project analysis in the fiscal year 1981 program. For the solar portions of new construction projects we are following the Congressional guidance on non-discounted, escalated energy cost savings and no additional system maintenance. Utilizing these constraints our analysis of solar applications to all our MCON projects has identified 36 (plus 3 Reserve and 1 hospital) "cost effective" opportunities. In our Energy Conservation Investment Program (ECIP) we use a 10 percent discount factor, escalated energy costs based on our experience since 1974 and a reasonable allowance for additional system maintenance. Using these realistic analysis constraints we have found few retrofit projects which are "cost effective" and none which compete for priority funding in competition with conventional conservation options. The DOE criteria recently published in the Federal Register differs with our ECIP criteria in that the energy price escalation rates are lower, the current prices are regionalized rather than specific to the application and the initial cost is reduced 10 percent. As a result of the relatively low differential energy cost rates, the DOE criteria if applied to solar applications would result in even less project justifications on life cycle cost basis then the DOD ECIP method.

Navy's position on solar energy is that at the present time it is life cycle cost effective in very few ideal cases. As a result of continuing high initial cost and relatively low energy costs, it will be quite a few years before it is an effective conservation option in competition with more conventional options such as insulation, etc. In new construction applications the cost effectiveness even in optimal cases is marginal. Navy is willing to apply the Congressional criteria to identify those most cost effective to gain operations and maintenance experience and incentivize the solar industry in the hopes of reducing future costs. But each dollar spent on solar is a reduction in operational requirement satisfaction and funds available for more cost effective conservation options.

Question. Provide for the record a copy of your instructions to the field for implementing Section 804.

Answer. A copy of NAVFAC message 122335Z GEB 80 is provided for the record.

Solar Energy Guidance on Fiscal Year 1982 MCON/MCNR Facilities

A. Navfacinst 11010.14M of 14 Dec. 1978.

1. The fiscal year 1979 Auth Act required that 25 percent of all new facilities except family housing include solar energy systems to the extent that engineering analysis demonstrate cost effectiveness. Expect goal attainment navy-wide for the fiscal year 1980 and fiscal year 1981 MCON/MCNR programs.

2. The fiscal year 1980 Auth Act repealed the prior solar provision and established new procedures for all new construction projects, including family housing, placed under design after 26 Nov. 1979. In general, this applies to projs included in the fiscal year 1982 and subsequent MCON/MCNR programs, and reinforces the intent of Congress for wider use of solar applications.

3. Accordingly, the following actions, which amplify instructions on page 4 of encl (1) to ref (A) are required:

1. Prepare a solar energy analysis for each new construction proj where the potential exists to save fossil fuel derived energy.

2. Results of the solar energy analysis shall be addressed in the ped, stating the feasibility or infeasibility of each new construction proj, as appropriate.

3. A solar energy system shall be included in any proj where determined to be cost effective. It is cost effective if the original investment cost differential for the solar system can be recovered over the expected life of the facility. In conducting the life cycle cost analysis, the solar system O&M cost differential will be considered zero and all calculations will be based on undiscounted, non-constant dollars.

4. For projects in which the solar energy analysis determines that a solar energy system is cost effective, the PED shall include the following additional info:

1. Type solar system included (DHW/space heating/cooling).

2. Type and area of collectors.

3. Solar system cost (exclude SIOH and contingency).

4. Average annual energy savings and fuel used.
5. Annual energy savings in barrels oil equivalent (BOE).
6. Percent energy contribution from solar system.
7. Payback (in years) of solar system cost.
8. Solar system design cost.

5. The cost for the solar application shall appear as a separate item in the 1391 cost estimate. In general, the solar system shall be part of the base bid rather than an additive bid item.

Question. Do you agree with the life cycle costing procedures for solar systems as promulgated by DOD or do you feel there should be some changes?

Answer. The Navy agrees with the one barrel, two barrel, three barrel solar life cycle costing procedures promulgated by DOD.

Question. Discuss your progress in getting EMCS projects implemented. Are they yielding the anticipated return?

Answer. EMCS projects which meet the inter-agency guide specifications are now nearing completion and data on each system's performance will not be available until each system has operated for one full year. However, performance data is available for the EMCS at the Naval Academy, Annapolis, MD which began operating in 1977. The project cost $327,000 with energy and cost savings estimated at 87,000 mBtu and $150,000 per year respectively. The system has performed exceptionally well with actual energy and cost savings of 162,000 mBtu and $433,000 per year respectively. Even when annual maintenance costs of $42,000 are factored in, the Naval Academy EMCS paid for itself in less than one year.

Question. Review your progress in the areas of:

(a) Conversion of power plants to coal.

Answer. Our fiscal year 1981 request includes the reconversion of the coal convertable plant located at the Naval Amphibious Base in Little Creek, Va. Four additional reconversions are planned for fiscal year 1982. Design has been authorized.

(b) Use of refuse derived fuel.

Answer. The Navy currently has refuse fired boilers operating at the Naval Station in Norfolk, VA and the Naval Shipyard in Norfolk, VA. Two smaller refuse incinerators at the Naval Station Mayport, FL and the Naval Air Station Jacksonville, FL are undergoing final acceptance testing. To date, operating results for the Mayport plant have been encouraging. The plant which has a design capacity of 48 tons per day, has been operating 24 hours per day, 5 days per week. During the initial phase of testing which began in October 1979, the plant was burning an average of 80 tons of trash per week. The volume has steadily increased and is currently averaging 160 to 180 tons per week. The only major problem to develop so far has been slagging but this appears to have been corrected. Operating results are not available for the Jacksonville plant. The Navy is also investigating proposals for the purchase of steam from regional refuse fired plants at the Naval Shipyard in Philadelphia, PA and the Navy Shipyard in Norfolk, VA.

(c) Use of geothermal power.

Answer. The fiscal year 1981 programs includes the second increment of a project to connect the Naval Station at Keflavik, Iceland to a district geothermal heating system.

On December 6, 1979, the Navy signed a contract with the California Energy Company, Inc. Santa Rosa, CA to develop from 20 to 75 megawatts of electrical generating capacity using the Navy's Coso geothermal resource at China Lake, CA. Under the terms of this contract, the contractor is to provide all capital and sell all power generated to the Navy at a ceiling price of 95 percent of the cost of power being sold by the local electric utility company.

To date the contractor has performed field investigation work and prepared and filed an environmental statement. Between 1 and 15 June he will conduct magnito telluric studies to determine the location of the hottest temperature zones. Site selection for drilling exploratory wells will be based on the results of these studies. The contractor's current schedule is:

15 Jun 80—Select exploratory well sites.
30 Jun 80—Arrange equity financing for 3 wells
1 Oct to 1 Dec 80—Drill first exploratory well
Dec 80—Drill second well if practical
Dec 80—Test and evauate first well

Apr–Dec 81—Design Power Plant, obtain necessary permits, prepare and file EIS

Dec 81—Order long lead equipment

Dec 81–Aug 83—Develop geothermal field

Sep 82–Aug 83—Construct power plant

Aug 83–Aug 84—Start up and shake down

Research efforts are underway to prove geothermal potential at Fallon, NV with the intent to solicit proposals for resource development similar to the Coso contract.

Question.

(d) Use of biomass fuel.

Answer. We are planning to convert an existing plant to a wood burning heating plant at the Naval Air Station in Brunswick, ME in fiscal year 1982.

TRIDENT

Question. Summarize authorizations and appropriations by fiscal year through Fiscal Year 1981 for the TRIDENT SUBASE at Bangor, Washington.

Answer.

TRIDENT MILITARY CONSTRUCTION[1]

[In thousands of dollars]

	Authorized	Appropriations
Fiscal year:		
1974	118,320	112,320
1975	100,000	100,000
1976	186,967	141,967
1977	92,278	129,328
1978	106,910	75,557
1979	0	16,255
1980	0	18,450
Subtotal (enacted)	[2] 604,475	[2] 593,877
1981 (proposed)	16,160	16,160
Total	620,635	610,037

[1] Includes community impact assistance.

[2] "Excess" authority, $10,598,000; less authority required for fiscal year 1974, $3,000,000; total available for bookkeeping adjustment, $7,598,000.

Question. Explain any change in the total estimated cost since last year.

Answer. The total current estimated cost to complete the construction of projects in Fiscal Years 1974 to 1979 is $573.8 million compared to $574.3 million reported last year. The change since last year is the result of project cost revisions based on completed project costs and refined project cost estimates. The estimated cost to complete projects in Fiscal Year 1980 is $18.7 million.

Question. When do you expect the first TRIDENT submarine to arrive at Bangor?

Answer. The first TRIDENT submarine is expected to arrive at Naval Submarine Base, Bangor in September 1981 and deploy for the first time in October 1981.

Question. Are you servicing any of the SLBM Force at Bangor now?

Answer. The Strategic Weapons Facility, Pacific, a tenant activity of Submarine Base, Bangor, provides missile support to the POLARIS submarines assigned to the Pacific Fleet. Additionally, two POLARIS submarines, the ROOSEVELT and the LINCOLN, are berthed at Submarine Base, Bangor until they enter the Puget Sound Naval Shipyard for inactivation or overhaul.

KAHOOLAWE

Question. What is your position (and that of the Administration) on S. 911, a bill to authorize a demonstration effort directed toward the cleanup of Kahoolawe Island?

Answer. On behalf of the DOD, the Navy has reviewed S. 911 and has no objection to its enactment. Coordination with DOD and OMB indicates no disagreement with the intent of the bill.

Question. What is your best current estimate as to the cost of S. 911 and, if feasible, the cleanup of the entire island?

Answer. A program to develop new technology for the detection and clearance of ordnance, as envisioned by S. 911, is expected to require at least seven years, and cost at least $12,500,000, of which $600,000 would be first year costs. Previous estimates to clear the island, using present methods, exceeded $131 million (FY–79 dollar level) which did not include any water area. The cost of decontamination of both land and water areas could possibly approach this figure, depending on the sophistication of the newly developed techniques.

SHIPYARD CONSTRUCTION

Question. Provide for the record details on the backlog of construction requirements for the Navy's shipyards. Include a project listing by site.

Answer. The backlog of construction requirements for shipyards is distributed among power plants (23 percent), industrial shops (20 percent), industrial support facilities (18 percent), utilities systems (16 percent), dry docks (16 percent) and waterfront facilities (7 percent). Approximately 60 percent of the total investment in facilities is required just to maintain the shipyard's capability to function while 28 percent will lead to productivity enhancement. The remaining 12 percent will provide new capabilities required to service complex combatant ships coming into the Fleet.

Project listing by shipyard follows.

PORTSMOUTH NAVAL SHIPYARD MODERNIZATION PROGRAM

Project No.	Project title	Estimated cost (millions)
191	Machine/central tool shop (3d increment)	$11.7
200	Boiler feedwater treatment modifications	1.2
163	Replace tie line to public service company	3.0
	Subtotal	15.9
112	Electrical/electronics shop modernization	2.2
195	Upgrade berth 6 for SSN/SSBN	8.0
196	Industrial storage facility	.9
150	Additional power drydock No. 2	.9
127	Quality assurance consolidation	5.0
	Subtotal	17.0
120	Structural group improvements	15.7
171	Addition to supply warehouse	5.7
201	Replace combustibles storage	2.6
134	Paint shop improvements	1.1
133	Woodworking shop improvement	1.1
	Subtotal	26.2
145	Addition to engineering/management building	6.4
113	Outside machine shop modernization	.6
125	Rigger shop modernization	.5
114	Pipe shop improvements	4.1
	Subtotal	11.6
132	Field shop, drydock No. 2	.4
197	Field shops, berths 11 and 13	2.0
131	Temporary service shop modernization	3.1
107	Security/IRO office	.5
123	Fire protection, various buildings	1.3
	Subtotal	7.3
172	Lengthen/deepen drydock No. 1	34.0
181	Consolidation of services, berths 11 and 13	3.8
198	Access road	.2
188	Standby diesel generators	.9
121	Berth 2 improvements	1.1
	Subtotal	40.0
	Total	118.0

PHILADELPHIA NAVAL SHIPYARD MODERNIZATION PROGRAM

Project No.	Project title	Estimated cost (millions)
423	Electronics, weapons, precision/electrical facility (2d increment)	13.9
495	Collimation facility	.3
309	Engineering/management building	15.0
437	Fire protection, various buildings	1.2
356	Electrical distribution system	5.9
	Subtotal	22.4
436	Delaware/potable water systems	7.3
474	Paint shop facility	.4
328	Pattern shop relocation	.2
468	Ships fuel storage	1.7
464	Boiler replacement (1st increment)	6.9
	Subtotal	16.5
318	Utility tunnel drydock No. 2	2.8
465	Boiler replacement (2d increment)	7.3
322	Additional capstans drydock No. 5	.7
	Subtotal	10.8
340	Utility tunnel, drydock No. 3	3.9
466	Turbogenerator replacement	10.1
467	Air compressor replacement	1.8
362	Cafeteria improvements	1.9
475	Refractory facility	.1
	Subtotal	17.8
	Total	81.4

NORFOLK NAVAL SHIPYARD MODERNIZATION PROGRAM

186	Utilities	5.2
187	Engineering/management building (2d increment)	12.2
	Subtotal	17.4
253	Powerplant	101.6
264	Electrical distribution system	8.1
	Subtotal	109.7
196	Service group facility	11.4
278	Mechanical laboratory consolidation	.2
287	Modification to refuse boiler	1.8
280	Addition to dockside work center	.2
	Subtotal	13.8
256	Logistic support facility	36.3
282	Expand overhaul facility	.7
283	Hydraulic overhaul facility	.6
	Subtotal	37.6
224	Outside machine shop	7.7
246	Engineering/management building (3d increment)	8.5
263	Powerplant (2d increment)	3.8
	Subtotal	20.0
199	Central tool shop	5.7
265	Crane overhaul facility	4.1
285	Submarine berthing facility	2.7
	Subtotal	12.5
213	Electronics, weapons, precision facility	7.7
217	Signal system	5.7

NORFOLK NAVAL SHIPYARD MODERNIZATION PROGRAM—Continued

Project No.	Project title	Estimated cost (millions)
286	Waterfront support facility	8.0
207	Drydock	89.6
	Subtotal	111.0
169	Sprinkler system	3.8
185	Grounded electric power	9.6
192	Structural shop	7.9
	Subtotal	21.3
	Total	343.

CHARLESTON NAVAL SHIPYARD MODERNIZATION PROGRAM

173	Modernize dredge spoil area	4.6
095	Superflood pumps, drydock No. 2	1.1
111	Electrical distribution system (3d increment)	4.5
940	Pier foxtrot service tunnels	1.9
941	Logistic support facility	4.8
623	Water distribution	2.3
945	Crane/equipment facility	13.2
	Subtotal	32.4
178	Powerplant	53.6
600	Modernize pier foxtrot	16.3
943	Quality assurance laboratory	3.4
	Subtotal	19.7
110	Modernize quality assurance building	3.6
638	Quaywall/Transfer facility	4.9
180	Technical support facility	9.3
	Subtotal	17.8
169	Modernize cafeteria	2.2
965	Modernize pier delta	14.1
	Subtotal	16.3
	Total	139.8

NSY LONG BEACH NAVAL SHIPYARD MODERNIZATION PROGRAM

106	Fire protection pipeline	4.8
173	Structural group improvements	11.9
178	Quality assurance facility	12.8
	Subtotal	29.5
216	Repairable control center, building 129	.9
217	Repairable control center, building 210	2.3
144	Utility tunnel	5.1
127	Fresh water improvement	6.3
125	Compressed air system improvements	3.2
161	Electrical system improvements	4.6
	Subtotal	22.4
179	Integrated logistics support facility	28.6
219	Repairable control center, piers (4)	2.1
218	Repairable control center, docks (3)	1.6
165	Emergency stand-by power	4.6
205	Centralized public works facility	16.8
	Subtotal	25.2
107	Steam system improvements	3.5
214	Feedwater demineralizers	1.3
220	Precision gear facility	1.9
200	Steam plant fuel storage	1.1
111	Pier 3 improvements	6.1

NSY LONG BEACH NAVAL SHIPYARD MODERNIZATION PROGRAM—Continued

Project No.	Project title	Estimated cost (millions)
145	Crane track, drydock No. 1 west	2.6
183	Relocate SESEF range	.6
097	Industrial relations facility	2.0
171	Training facility	3.1
176	Secure industrial area fence	.6
128	Storm drain improvements	2.9
	Subtotal	25.7
147	Multipurpose drydock, phase I	72.8
129	Crane tracks, piers 1 and 2	1.2
136	Cafeteria No. 2 replacement	2.2
109	Drydock No. 2 improvements	6.6
110	Drydock No. 3 improvements	5.7
124	Street lighting improvements	3.2
	Subtotal	18.9
162	Multipurpose drydock, phase II	82.0
	Total	305.1

MARE ISLAND NAVAL SHIPYARD MODERNIZATION PROGRAM

Project No.	Project title	Estimated cost (millions)
121	Pipe and boiler shop	17.1
230	Drydock No. 2 caisson	2.6
234	Dredging—Entrance channel	5.7
173	Plating shop	8.2
236	Service group complex alterations	.6
229	Alternate 115 kV electric power service	2.9
	Subtotal	37.1
231	Drydock No. 3 alterations	11.5
182	Waterfront service support facility	10.3
167	Electric power distribution (3d increment)	6.1
	Subtotal	27.9
197	Crane trackage system	10.6
185	Outside marine machine shop	18.1
223	Compressed breathing air	4.7
	Subtotal	33.4
127	Salt water system	13.1
235	Horizontal paint and blast facility	4.6
	Subtotal	17.7
177	Grade "A" water distribution	.5
179	Engineering/management building (2d increment)	11.1
233	Communication line raceways	.5
	Subtotal	12.1
	Total	128.2

PUGET SOUND NAVAL SHIPYARD MODERNIZATION PROGRAM

Project No.	Project title	Estimated cost (millions)
421	Ship support service center	3.3
500	Power plant	125.0
162	Abrasive material handling facility	2.6
206	Mooring hardware, pier 6	.4
	Subtotal	131.3
439	Electrical distribution system (4th increment)	8.5
416	Quality assurance facility	6.5
420	Support facility, drydock No. 6	2.8
226	Apprentice school addition	1.4
506	Process material storage	.3
	Subtotal	19.5
153	Pattern shop improvements	4.4
440	Electrical distribution system (5th increment)	8.0

PUGET SOUND NAVAL SHIPYARD MODERNIZATION PROGRAM—Continued

415	Electronics, weapons, precision facility (1st increment)	3.4
435	Maintenance and tool control facility	4.1
505	Building 460, structural deficiencies	5.8
	Subtotal	25.7
509	Waterfront support facility, pier 6	3.1
508	Rigger and paint shop	4.7
444	Electronics, weapons, precision facility (2d increment)	2.4
517	Crane track, drydock No. 5	.4
407	Fuel oil system modification	.5
514	Logistic support facility	1.0
	Subtotal	12.1
445	Electronics, weapons, precision facility (3d increment)	11.7
504	Machine shop structural deficiencies	3.6
413	Waterfront operations facility	1.9
512	Industrial gas distribution system	1.7
510	Welding school	1.9
409	Steam distribution system improvements	1.0
503	Telerex material handling system	1.2
	Subtotal	23.0
	Total	211.6

PEARL HARBOR NAVAL SHIPYARD MODERNIZATION PROGRAM

213	Service shops	12.5
415	Salt water system	8.9
087	Training facility	3.7
215	Engineering/management building (1st increment)	12.0
	Subtotal	37.1
419	Electrical improvements	4.3
241	Flammable/hazardous material facility	2.2
245	Delagging facility	1.2
246	Faired mast repair facility	.5
	Subtotal	8.2
418	Compressed air system	10.7
237	Engineering/management building (2d increment)	4.2
240	Logistic support facility	6.3
	Subtotal	10.5
434	Improve steam system	14.8
098	Transportation shop	1.5
	Subtotal	16.3
236	Cafeteria	4.7
248	Alumium flame spray facility	.3
429	Additional electrical shore power	2.5
210	Structural shop	7.5
	Subtotal	15.0
095	Woodworking shop	4.2
092	Pier improvement	9.4
239	Alarm system	.2
247	Waterfront latrine	.3
234	Sprinkler system	1.2
	Subtotal	15.3
093	Crane tracks	1.7
436	Improvements to electrical system	1.7
427	Backflow preventative devices	4.5
096	Storage sprinkler system	.1
222	Fire protection drydock No. 4	.9
	Subtotal	8.9
	Total	122.0

SHIPYARD CONSTRUCTION

Question. How do you intend to address this backlog? Provide for the record your FYDP construction plans for each shipyard. Will this get the shipyards "well" in terms of priority needs?

Answer. Although a final Naval Shipyard Modernization Military Construction Plan through fiscal year 1985 is still under review, it is anticipated that funding may average in excess of $100 million per year. We are carefully reviewing the backlog of projects at this time and plan to request the most urgent waterfront and utilities projects first.

SHIPYARD MODERNIZATION MILCON PROJECTS NOT FUNDED OR BUDGETED THROUGH FISCAL YEAR 1981 (IN PRIORITY ORDER)

Shipyard and title	Project No.	Fiscal year 1981 estimated cost (thousands)
35 percent or more design completed:		
Portsmouth: Machine/central tool shop	191	$11.0
Puget Sound: Ship support service center	421	3.0
Charleston: Water distribution lines improvement	623	2.1
Long Beach: Fire protection pipeline	106	4.1
Pearl Harbor: Service shops	213	14.0
Norfolk: Utilities improvements	186	4.9
Charleston: Crane/equipment maintenance building	945	12.0
Mare Island: Dredging entrance channel	234	5.7
Charleston: Dry dock superflood pumps	095	1.1
Philadelphia: Collimation tower	495	.5
Mare Island:		
Service group complex alterations	236	.6
Horizontal paint and blast facility	235	5.0
Pearl Harbor: Training facility	087	3.5
Total		67.5
35 percent design by January 1981:		
Puget Sound: Central heating plant	500	$62.7
Long Beach: Structural group	173	11.9
Mare Island: Pipe and boiler shop	121	17.1
Charleston: Modernize dredge spoil area	173	4.6
Pearl Harbor: Salt water system	415	8.9
Philadelphia: Electronics weapon precision/electric facility	423	13.9
Mare Island: Dry dock 2 caisson	230	2.6
Total		121.7

These lists show the highest priority shipyard projects on which design is under way or complete. Specific projects beyond these lists have not yet been selected for programming over the next five years.

PROJECTS—GENERAL

Question. Is every project in your request under design?

Answer. There are no projects in the Navy's request which are not under design. All Navy projects had achieved 35 percent status by 15 January 1980 except one, Dredging at the Naval Support Facility, Diego Garcia Island. This project was a late add to the Navy's program by the Office of the Secretary of Defense in December 1979. The design schedule is: 35 percent, May 1980; 100 percent, August 1980.

Question. What rates of inflation have you used in estimating the costs of projects in your request. Provide an example showing how inflation is factored into your estimates.

Answer. Inflation rates used in MCON Program cost estimates are prescribed by the Office of the Secretary of Defense (OSD). For the fiscal year 1981 program these rates are:

Fiscal year:	*Percent*
1979 (Oct. 1, 1978–Sept. 30, 1979)	9.6
1980 (Oct. 1, 1979–Sept. 30, 1980)	9.2
1981 (Oct. 1, 1980–Sept. 30, 1981)	8.3
1982	7.6
1983	7.2
1984	6.6
1985	6.0

The above factors are used in preparing program costs by first estimating the cost of the project in the present and then projecting it to an estimated date of contract award. For example—the cost estimate for P–093 Magazines POMFLANT Charleston, SC was arrived at as follows: A construction cost estimate was prepared based on prevailing costs as of 1 September 1979. The estimated construction cost at this time was $10,045,000. Award of the construction contract was projected to be 30 December 1980. To escalate from 1 September 1979 to 30 December 1980 would involve a period of 1 month in fiscal year 1979 at an annual rate of 9.6 percent multiplied by a 12 month period in fiscal year 1980 at an annual rate of 9.2 percent multiplied by a 3 month period in fiscal year 1981 at an annual rate of 8.3 percent. The arithmetic is as follows:

1.0+1/12 (0.096) × 1.0+12/12 (0.092) × 1.0+3/12 (0.083)=1.008 × 1.092 × 1.0207=1.1235.

1.1235 × $10,045,000=$11,285,000 estimated construction cost at award.

$11,285,000 × 1.05 (5 percent contingency)=$11,849,000.

$11,849,000 × 1.055 (5.5 percent supervision, inspection and overhead)= $12,500,000 project cost.

Question. Provide a list of projects in this request that were previously requested and failed authorization. State the reason the project was not authorized.

Answer. There are no projects in this Navy request that previously failed authorization.

Question. Provide a list of projects in this request that were previously authorized, but for some reason were never built. State reason the project was not built.

Answer. Two projects in this request were parts of previously authorized projects, as follows:

Pipe Cleaning Facility, Charleston Naval Shipyard: $3,350,000 additional authorization is sought for the unexecuted portion of approved scope of the fiscal year 1979 Pipe Shop project, which was authorized at $7,200,000. Section 603 cost variation provisions were used for authority to award the executed portion of the Pipe Shop project.

A comparison of the original facility scope with the amount of awarded scope and that to be awarded follows:

Original scope	Awarded scope	Unawarded scope	Additive scope	Total fiscal year 1981 scope
Building (125,000 ft^{3})	125,000 ft^{2}	NA		NA.
Built-in equipment:				
Clean—Tank and scrubber system (LS)	None	LS		LS.
Dust collection system (LS)	None	(LS)	LS	LS.
Overhead cranes (5 each)	3 each	2 each		2 each.
Monorail cranes (7 each)	7 each	NA		NA.
Jib cranes (30 each)	None	30 each		30 each.
Waste treatment facilities (LS)				LS.

Note: Fiscal year 1979 authorization and funding equal $7,200,000. CWE equals $8,600,000 for awarded scope at time of award. CWE equals $3,350,000 for fiscal year 1981 scope.

Waterfront Support Facilities, Charleston Naval Shipyard: $3,600,000 additional authorization is sought for the unexecuted portion of approved scope of the fiscal year 1979 Pier Modernization project, which was authorized at $11,300,000. Section 603 cost variation provisions were used for authority to award the executed portion of the prior project. (Only for activity total in excess of 105 percent.)

A comparison of the original facility scope with the amount of awarded scope and that to be awarded follows:

Original scope	Awarded scope	Unawarded scope	Additive scope	Total fiscal year 1981 scope
Pier extension (3,735 yd²)	3,735	NA	None	NA
Crane and railroad trackage (3,650 lin ft)	3,650	NA		NA
Bulkhead (400 lin ft)	200	200		200
Laydown area pavement (30,900 yd²)	15,450	15,450		15,450
Building alterations (38,000 ft²)	19,000	19,000		19,000
Service building (21,000 ft²)	None	21,000		21,000

	Amount
Fiscal year 1979 authorization and funding	$11,300,000
CWE for awarded scope at time of award	12,295,000
CWE for fiscal year 1981 scope	3,600,000

Question. Are there any projects in your request impacted by pending or planned base realignment announcements?

Answer. There are no projects in the Navy's fiscal year 1981 budget request impacted by pending or planned base realignments.

Question. Provide for the record a list of unfunded construction projects in order of priority totalling not more than $100 million that can be put under contract during fiscal year 1981. Include with your list the project design status and the project form 1381.

Answer. Additional unfunded Navy program requirements are listed in priority order below.

Activity and title	Project No.	Cost (thousands)	Design percent complete Oct. 1, 1980
NAVCAMSEASTPAC Honolulu: Satellite communications control	126	$2,000	100
NAVCAMSLANT Norfolk. Satellite communications control	962	700	100
Classified location: Satellite communication terminal	303	2,100	100
NAVCAMSLANT Norfolk: Satellite communication terminal (at Guantanamo Bay)	740	900	100
NAVFAC Brawdy: Support facilities expansion	007	2,800	100
NAS Norfolk: Training building (H-53D)	973	900	100
NAS Memphis: Cold storage warehouse	049	900	100
NAF Sigonella:			
Ground support equipment shop	286	2,900	100
Unaccompanied enlisted personnel housing	724	4,100	35
Hangar sprinkler system	215	1,800	100
Vehicle maintenance facility	242	1,800	100
Armed Forces radio and special services building	749	1,100	100
NSY Portsmouth: Machine/central tool shop	191	11,000	100
NSY Puget Sound: Ship support service center	421	3,000	100
NSY Charleston: Water distribution lines improvement	623	2,100	100
NSY Long Beach: Fire protection pipeline	106	4,400	100
NSC Norfolk: Container operations facility	207	8,800	100
NSY Pearl Harbor: Service shops	213	14,000	100
NAS Miramar: Engine maintenance shop	253	2,000	100
NAB Little Creek: Special warfare operations building	195	6,000	100
NAS North Island: Instrument calibration shop	439	1,300	100
NAS Brunswick: Aircraft maintenance facilities	134	1,100	100
NWS Concord: Electrical distribution system	007	1,300	100
NAS Moffett Field: Taxiway overlay	105	5,900	35
NUSC Newport: Launcher Laboratory	025	4,400	100
NEODS Indian Head: Nuclear weapons training facility	714	2,600	100
NATC Patuxent River: Chesapeake test range	301	1,500	100
FCTCLANT Dam Neck: Steam line	825	2,700	100
NSB New London: Security facilities	309	700	35
NAB Coronado: SEAL team facility	072	3,500	35
Total		98,000	

PROJECTS—SPECIFIC

WATER POLUTION ABATEMENT FACILITIES, NAVAL AND MARINE CORPS INSTALLATIONS INSIDE AND OUTSIDE THE UNITED STATES

Question. What is the design status of your pollution abatement projects?

Answer. All requested Navy and Marine Corps pollution abatement projects had achieved 35 percent design status prior to submission to the Congress, and all will achieve 100 percent status before 1 October 1980.

ENERGY CONSERVATION FACILITIES, NAVAL AND MARINE CORPS INSTALLATIONS INSIDE AND OUTSIDE THE UNITED STATES

Question. What is the design status of your ECIP projects?

Answer. All requested Navy and Marine Corps ECIP projects had achieved 35 percent design status by 15 January 1980. Only one project, energy improvements at the Naval Research Laboratory, Washington, D.C., will not have achieved 100 percent status before 1 October 1980. Design completion for this project is scheduled in December 1980.

Question. Provide the EC ratios on all projects.

Answer.

ENERGY CONSERVATION FACILITIES, NAVAL AND MARINE CORPS INSTALLATIONS INSIDE AND OUTSIDE THE UNITED STATES

Project and description	Cost (thousands)	Energy conservation (million Btu per $1,000)
NARF Alameda, Calif: Facility energy improvements	$1, 450	39
NAS Alameda, Calif.: Heating, ventilation, and air-conditioning	3, 600	23
MCB Camp Pendleton, Calif.: Facility energy improvements	1, 350	29
NAS Miramar, Calif.: Facility energy improvements	1, 200	44
NAS North Island, Calif.: Lighting systems	850	32
PMTC Point Mugu, Calif.: Facility energy improvements	3, 950	38
NPWC San Diego, Calif.: Steam and condensate systems	670	84
NRL Washington, D.C.: Facility energy improvements	7, 300	35
NS Mayport, Fla.: Steam and condensate systems	620	33
NAS Whiting Field, Fla.: Facility energy improvements	580	33
NPWC Great Lakes, Ill.: Facility energy improvements	8, 400	26
NOS Louisville, Ky.: Boiler plant modifications	2, 050	90
MCAS Cherry Point, N.C.: Steam and condensate systems	4, 850	53
NSY Philadelphia, Pa.: Steam and condensate systems	710	52
NCBC Davisville, R.I.: Weatherization	550	24
MCDR Parris Island, S.C.: Facility energy improvements	1, 200	23
NSY Norfolk, Va.: Facility energy improvements	600	41
NAS Oceana, Va.: Facility energy improvements	1, 250	24
MCDEC Quantico, Va.: Facility energy improvements	3, 000	32
UWES Keyport, Wash.: Facility energy improvements	860	25
NAS Whidby Island, Wash.: Facility energy improvements	540	43
NAF Atsugi, Japan: Steam and condensate systems	1, 000	24
MCAS Yuma, Ariz.: Lighting systems	280	44
NWC China Lake, Calif.: Lighting systems	190	22
NWS Concord, Calif.: Lighting systems	440	27
NSA Mare Island, Calif: Heating, ventilation, and air -conditioning	130	46
NTC San Diego, Calif.: Heating, ventilation, and air-conditioning	170	140
NARF Pensacola, Fla.: Heating, ventilation, and air-conditioning	380	83
NRMC Great Lakes, Ill.: Facility energy improvements	420	33
NSRDC Annapolis, Md.: Weatherization	200	25
NNMC Bethesda, Md.: Weatherization	270	60
NRMC Philadelphia, Pa.: Facility energy improvements	380	50
NSA Philadelphia, Pa.: Weatherization	200	27
NSC Charleston, S.C.: Facility energy improvements	310	35
NSY Charleston, S.C.: Lighting systems	140	48
NRMC Corpus Christi, Tex.: Energy monitoring and control system	200	93
FCTCLANT Dam Neck, Va.: Steam and condensate systems	400	57
NAB Little Creek, Va.: Steam and condensate systems	180	28
NAS Norfolk, Va.: Weatherization	140	60
NS Norfolk, Va.: Lighting systems	210	52
NSC Williamsburg, Va.: Lighting systems	220	31
NRMC Portsmouth, Va.: Energy recovery systems	170	44
NRMC Quantico, Va.: Facility energy improvements	420	32
NSY Puget Sound, Wash.: Boiler plant modification	120	73
NSA Seattle, Wash.: Lighting systems	150	23
NSD Guam, MI: Lighting systems	490	23
NS Roosevelt Roads, PR.: Lighting systems	210	53

TANK MAINTENANCE FACILITY, MARINE CORPS BASE, CAMP LEJEUNE, N.C.

Question. How did you arrive at the cost and the scope of the solar system for this project?

Answer. The new construction cost of $246,192 was based on collector cost of $71.36 per square foot for a solar domestic hot water system. The system is a flat plate solar panel with 3,450 square feet of single glazed collectors with a glycol loop system for freeze protection, a 5,000 gallon insulated storage tank, and insulated copper piping.

OFFICER CANDIDATE SCHOOL DINING FACILITY, MARINE CORPS DEVELOPMENT AND EDUCATION COMMAND, QUANTICO, VA.

Question. This facility grosses out at $175/SF. Justify such an extreme cost.

Answer. The unit cost of the basic building is $95.68 SF. Built in kitchen equipment adds another $33.95/SF. The remaining cost is for providing utilities to the site, providing roads, and parking, site improvements and demolition of an old unused parachute shop and a small wood frame cafeteria at the site.

Question. Why can't the existing facility be upgraded?

Answer. The Officer Candidate School's existing dining facility is located in an antiquated, inadequate, high-maintenance, wood-frame structure. It is deficient in mechanical ventilation, lighting and capacity to adequately feed the officer candidates. It is not economically feasible to upgrade the existing facility.

LAUNCHER EQUIPMENT PROCESSING BUILDING, NAVAL SUBMARINE BASE, BANGOR, WASH.

Question. The justification for this project is not clear. Do you need the facility to work on the POLARIS? Why can't you continue to do the work in the available TRIDENT facilities?

Answer. The new facility is not needed to work on POLARIS missile launcher equipment. The project is required to provide a facility to process TRIDENT missile launcher equipment that satisfies the explosive safety separation requirements which prescribe a location away from other missile processing facilities. The on-going requirement to process POLARIS missile launcher equipment does not contribute to the requirement for this project in that the need to process POLARIS missile launcher equipment will end with the requirement of the POLARIS submarine, most probably prior to the completion of the TRIDENT Launcher Equipment Processing Building. Space currently being utilized for this function cannot be utilized to process TRIDENT missile launcher equipment in that it will be utilized for missile support when TRIDENT missile production commences and it will not satisfy the aforementioned explosive safety separation requirements.

DRYDOCK COVER, NAVAL SUBMARINE BASE, BANGOR, WASH.

Question. Why was this requirement not accommodated earlier?

Answer. A drydock cover has been considered a requirement for several years. However, other alternative methods of providing weather protection such as movable cover, tarpaulin on metal frames, etc., were being considered. Based on an economic analysis and environmental constraints for dust collection, this project was deemed the most appropriate alternative and initially programmed in the fiscal year 1981 Program.

Question. Do you have SALT problems with covering the TRIDENT during refit?

Answer. A Strategic Arms Limitation Compliance Review by the Under Secretary of Defense for Research and Engineering has concluded that the proposed drydock cover is not inconsistent with Strategic Arms Limitation agreements. Approximately 350 feet of the TRIDENT submarine will be visible from the air at all times, which is more than the 240 feet visible when a TRIDENT submarine is in the explosive handling wharf. The project consists of two 100-foot mobile enclosures to provide weather protection for that portion of the submarine being repaired.

TRIDENT COMMUNITY IMPACT ASSISTANCE, NAVAL SUBMARINE BASE, BANGOR, WASH.

Question. Provide an accounting of the impact funds previously authorized.

Answer. An accounting of the impact funds previously authorized is as follows:

Functional category use	Amount fiscal year 1980 and prior (millions)	Fiscal year 1981 program
Schools	$6.6	4.0
Roads:		
State	19.9	
County	7.6	2.0
Municipal	.8	.4
Water	3.0	
Sewer	.4	
Fire	1.9	.3
Law and justice	3.2	.3
Social and health	1.3	
Libraries	.4	
Parks	.7	
Planning	1.1	
Housing	0	1.6
Total	46.9	8.6

Question. How did you arrive at this estimate?

Answer. The total program amount (estimate) of $55.5 million was determined after completion of a comprehensive fiscal analysis. The total amount and its specific components were determined through a cooperative effort involving the State of Washington; the Northwest Federal Regional Council; Kitsap, Mason and Jefferson Counties; the Navy; and the Office of Economic Adjustment.

CHAPEL COMPLEX, NAVAL SUBMARINE BASE, BANGOR, WASH.

Question. How are you handling church services at the present time?

Answer. The Naval Submarine Base Bangor, as an interim measure, is conducting worship services in the Officers Club and religious education classes in the TRIDENT Training Facility.

Question. Is this facility sized to handle the ultimate population to be stationed at Bangor?

Answer. The Chapel Complex has been designed to accommodate the projected military and dependent population of SUBASE, Bangor, to support the operation of ten TRIDENT Submarines.

YOUTH CENTER, NAVAL SUBMARINE BASE, BANGOR, WASH.

Question. According to the latest Defense policy, youth centers are to be built with NAF. Why are you requesting appropriated fund authority?

Answer. The Department of Defense has long had a general policy that the provision of morale, welfare and recreation (MWR) facilities is a basic responsibility of the Federal Government and that their construction should therefore be predominately funded with appropriated funds. Due to constraints imposed on Federal expenditures for capital improvements in past years, the services have built a number of these facilities with non-appropriated funding.

In November 1979 Congressional conferees on the fiscal year 1980 Defense Authorization Bill (House Report No. 96–521) noted the disparity among the services regarding the use of non-appropriated funds for MWR construction and directed the Department of Defense to establish a consistent programming policy. The recommended programming policy forwarded by DOD recommends that inasmuch as military construction funds have traditionally been used for the majority of community facility construction incident to the establishment, activation or expansion of a military installation, it would be expected that appropriated funding would be continued.

The establishment of a new base, with its requisite operational and attendant support facilities, is properly a function of appropriated fund support in order that the base can adequately satisfy its total mission requirements. The decision to build a new base was a conscious one made to maintain national security and the military personnel should not be required to pay the costs of construction for such a decision. Accordingly, MWR facilities for both Kings Bay and Bangor should be constructed using military construction funds.

NAVAL SUBMARINE SUPPORT BASE, KINGS BAY, KINGSLAND, GA.

Question. What is the status of the decision on stationing the TRIDENT at Kings Bay?

Answer. The Secretary of the Navy announced in May 1979 the selection of Kings Bay, Georgia as the preferred alternative location for the possible construction of the Atlantic Coast Strategic Submarine Base.

The Navy is now preparing an environmental impact statement which addresses the proposed construction of a strategic submarine base at Kings Bay. The final statement is to be filed with the Environmental Protection Agency in late August 1980. A final selection of the TRIDENT Base site is expected thereafter.

Question. Many of these facilities appear to be interim facilities that will not be adequate if TRIDENT goes to Kings Bay. Can't they be deferred?

Answer. All of the fiscal year 1981 Military Construction Program for Kings Bay is in support of the relocated POSEIDON Squadron from Rota, Spain, and therefore cannot be deferred. Presently there are approximately 4,000 military and dependent personnel at Kings Bay. Additional facilities would be required to support TRIDENT submarines at Kings Bay, should the decision be made to do so. However, all facilities and utility systems now constructed, under design, or proposed to support the relocated POSEIDON squadron are sited and designed for expansion to capacities necessary to support a TRIDENT squadron with a minimum of modifications.

Question. Defense policy is to build youth centers, theaters, etc. with NAF. Several of your projects requesting authority for appropriated funds appear to violate that policy. Why?

Answer. The Department of Defense has long had a general policy that the provision of morale, welfare and recreation (MWR) facilities is a basic responsibility of the Federal Government and that their construction should therefore be predominantly funded with appropriated funds. Due to constraints imposed on Federal expenditures for capital improvements in past years, the services have built a number of these facilities with non-appropriated funding.

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The establishment of a new base, with its requisite operational and attendant support facilities, is properly a function of appropriated fund support in order that the base can adequately satisfy its total mission requirements. The decision to build a new base was a conscious one made to maintain national security and the military personnel should not be required to pay the costs of construction for such a decision. Accordingly, MWR facilities for both Kings Bay and Bangor should be constructed using military construction funds.

NAUTILUS MEMORIAL, COMMANDANT NAVAL DISTRICT, WASHINGTON, D.C.

Question. Is there a precedent for this type of project and the expenditure of appropriated funds?

Answer. The *Arizona* Memorial in Pearl Harbor, Hawaii is the most recent example of the use of appropriated funds for this type of project. Funding was provided in fiscal year 1978.

Question. Why do you need to do dredging? Where will you spoil?

Answer. A small amount of dredging is needed immediately under the ship. The ship will be elevated for towing through the shallow river, then settled in a dredged basin. Spoil will be carried to Anacostia Naval Station.

Question. The Committee has received the attached coommunication with reference to this project. Would you comment in depth on the letter and the proposed amendment?

U.S. Senate,
Committee on Governmental Affairs,
Washington, D.C., March 13, 1980.

Hon. John Stennis,
Chairman, Senate Armed Services Committee, Washington, D.C.

Dear Mr. Chairman: We request the Committee consider striking the fiscal year 1981 funding requested for siting the USS *Nautilus* Memorial at the Washington Navy Yard and directing the Navy to conduct a fresh review of its proposal.

The world's first nuclear powered attack submarine *Nautilus* was decommissioned earlier this month and the Navy has proposed the establishment of a permanent national memorial for her. We fully support the establishment of such a memorial, which would include the siting of the ship for public tour, but believe the Navy's selection of the Washington Navy Yard is inappropriate and too costly.

Groton, Connecticut, would be a more appropriate site than the Washington Navy Yard. The *Nautilus* was built in Groton and homeported there for over 25 years. The Navy has a tradition of retiring historic vessels to areas of the country which have strong historical associations with those ships. Groton is the site of a major U.S. submarine base, and is informally known as the submarine capital of the world.

It was in Groton that the *Nautilus* was built and men who manned her lived and raised their families. The people of Southeastern Connecticut have made a vital contribution to the U.S. Submarine tradition and have enormous pride in their achievements. It is right that she be retired there.

In this period of high inflation and severe budgetary pressures, it is also preferable to select a site which, while meeting all selection criteria, will require significantly lower federal outlays. Site preparation costs in Connecticut would be much lower than Washington because the people of the state have demonstrated an ability and willingness to defray at least one-third, upwards of $1 million, of these costs.

The present Navy estimate of site preparation, exclusive of towing costs, for the three competing locales, is:

Groton, Connecticut: $2.7 million.
Washington Navy Yard: $2.6 million.
Annapolis, Maryland: $4.9 million.

Additionally, the Navy estimates that about $600,000 must be spent annually for operations and maintenance.

The Navy may, however, need to clarify the cost of the Groton and Washington sites. Although the October 1979 Navy estimate was $2.7 million for Groton, the March 1979 Navy estimate was $1.3 million. It is unclear why the figure rose so quickly in six months' time. Further, the Navy estimate for Washington appears to be understated. The Military Construction Authorization request for this site totals $3.4 million instead of $2.6 million, and presumably all of it is for *Nautilus* site preparation.

The State of Connecticut has already pledged $500,000 toward site preparation, and the Southeastern Connecticut Chamber of Commerce has announced it will begin a campaign to raise an additional $250,000. As well, a number of maritime and historical organizations have expressed a desire to raise money.

The willingness of the people of Connecticut to contribute substantially to the proper retirement of the *Nautilus* should weigh heavily in the Navy's siting decision. This will not only ease federal costs for building the memorial, but is indicative of the attention the ship will get when she is open for public inspection.

We suggest the Committee strike the fiscal year 1981 funding request for siting the *Nautilus* Memorial at the Navy Yard and direct the Secretary of the Navy to conduct a review of the siting decision. The Secretary should entertain proposals wherein any interested state or jurisdiction must demonstrate an ability to defray at least one-third of the non-towing site preparation costs through a financial plan approved by its Governor or principle political officer.

The Navy may need new legal authority to accept money from a State or jurisdiction to defray *Nautilus* siting costs. We are prepared to offer an amendment to the Military Construction Authorization which would make the outlay of money conditional upon deposit of the appropriate State match. Draft language of such an amendment is enclosed for your review.

We very much appreciate the Committee's consideration of this matter.

Sincerely,

Abe Ribicoff.
Lowell P. Weicker, Jr.

Amendment No. ——

Purpose: To authorize the Secretary of the Navy to select a suitable location for the public display of the United States ship Nautilus after it has been decommissioned

IN THE SENATE OF THE UNITED STATES (96th Congress, 2d session)

S. 2333

TO AUTHORIZE certain construction at military installations, and for other purposes

Referred to the Committee on -------------------- and ordered to be printed

Amendment intended to be proposed by Mr. Ribicoff

On page 51, between lines 22 and 23, insert the following new section:

SELECTION OF LOCATION FOR PUBLIC DISPLAY OF THE UNITED STATES SHIP NAUTILUS

Sec. 906. In order that the world's first nuclear powered submarine, the United States Ship *Nautilus*, may be placed on public display within the United States after such submarine has been decommissioned, the Secretary of the Navy may permanently base such submarine at a suitable site selected by him in any State, except that the Secretary may not permanently base such submarine at any site in any State unless such State agrees to pay not less than one-third of the site preparation costs incurred in connection with the permanent basing of such submarine at such site. As used in this section, the term "State" means the several States and the District of Columbia.

Answer. The Navy disagrees with the Senator Weicker and Senator Ribicoff request for the Committee to strike funding for the Washington Navy Yard site and to direct the Navy to conduct a fresh review of its proposal.

The Navy has been examining potential sites since early 1978. Of the many sites recommended and reviewed, three areas stood out as most likely candidates—U.S. Naval Academy, Annapolis, Maryland (examined between March and July 1978); U.S. Submarine Base, Groton, Connecticut (examined between December 1978 and April 1979) and the Washington Navy Yard, Washington, D.C. (examined between June and September 1979). Site feasibility examinations were conducted to select preferred sites from each area.

In October 1979, Secretary of the Navy *Hidalgo* selected the Washington Navy Yard as the display site for *Nautilus*. The Secretary determined that the Washington Navy Yard was the most appropriate site based on a comparison of the suitability of the preferred site from each area, and the national historical significance of the ship. A comparison of the merits of the three preferred sites is included as an enclosure to this response.

Nautilus represents a technological innovation rarely achieved in a single ship. The ship's stature is in keeping with that accorded USS *Constitution* and USS *Arizona*, and is not a ship which, by name, has unique significance for a particular area of the country. Therefore, site selection was based primarily on the suitability of the site itself, as well as the national character of the ship.

Cost estimates for siting *Nautilus* as an historical ship were assessed by SECNAV as part of the site suitability. The cost estimate for the preferred site at the Washington Navy Yard ($2.6M) is essentially the same as the estimate for the preferred site at SUBASE Groton ($2.7M). The Navy was aware of the offer by the State of Connecticut to support the project at Groton with $500 thousand (represented as $100 thousand for siting and $400 thousand for promotion), but the amount offered was considered small relative to the total estimated siting costs and site costs are only part of the suitability of the site itself.

As to the clarification of the cost estimates for the Groton and Washington Navy Yard sites, the Groton feasibility examination interim report forwarded to the Chief of Naval Material in March 1979 contained estimated site costs of $1.34M. As this report proceeded through the channels of review, the adequacy of the site, relative to the previously completed examination of sites at Annapolis was questioned. For instance, it was considered to be more appropriate to moor the ship alongside a concrete bulkhead vice wooden pilings. In addition, the review process refined the interim cost estimates made in the field to more closely reflect anticipated costs. The feasibility examination final report (dated April 1979) cost estimate for the preferred Groton site is $2.71M.

The purpose of the Groton site feasibility examination was to determine the feasibility, examine the suitability and obtain estimated costs to compare the preferred Groton site with the preferred site from the only other feasibility examination undertaken up to that point—that for Annapolis. The Washington Navy Yard site feasibility examination, which was not undertaken until mid June 1979, initial cost estimates were also less than the final cost estimates, after completing the review process.

Cost estimates for Groton and Annapolis sites are the result of a limited site feasibility examination, and do not include detailed site planning necessary to confirm actual costs. Site planning for the Washington Navy Yard has proceeded as required to the point of selection of a contractor and cost estimates for the site are considered to be close to actual costs.

The Navy does not concur with the recommended amendment to the fiscal year 1981 MILCON authorization by Senators Weicker and Ribicoff of Connecticut, in which SECNAV could select a site only if the selected state (or Washington, D.C.) guaranteed to pay one third of the siting costs. This amendment is considered to strongly shift the site suitability emphasis to site costs, rather than allow selection based on a comparison of the overall merits of the site, and it would immediately give unfair advantage to the Groton site.

Recognizing the desirability of minimizing federal outlays for the project, the Secretary of the Navy made his selection of the Washington Navy Yard, based on the overall suitability (including cost estimates) of the three sites, and the national historic significance of the ship.

Details on the *Nautilus* site study effort outlining the three potential sites follows.

USS NAUTILUS MONUMENT SITE LOCATION

Brief.—This paper summarizes the conclusion of the *Nautilus* siting feasibility examinations and provides a comparison of the suitability of the three potential sites that stood out amongst the several sites recommended and reviewed.

Background.—On 30 October 1979 the Secretary of the Navy selected the Washington Navy Yard based on a comparison of the suitability of the recommended sites, and the national historical significance of the ship.

Discussion.—*Nautilus* represents a technological innovation rarely achieved in a single ship. The ship's stature is in keeping with that accorded USS *Constitution* and USS *Arizona*, and it is not a ship which, by name, has unique significance for a particular area of the country. Therefore, site selection was primarily based on the suitability of the site location, as well as the national character of the ship.

Three potential sites stood out amongst the many sites recommended and reviewed—U.S. Submarine Base, Groton, Connecticut; U.S. Naval Academy, Annapolis, Maryland; and the Washington Navy Yard, Washington, D.C.

All three sites have historical significance:

The Washington Navy Yard as the first U.S. Naval Base, has had a significant historical background and is now the Navy ceremonial center for Washington, D.C.

Annapolis stands out for its Navy tradition and widely recognized role as the major training center for naval officers.

Groton is associated with *Nautilus* as construction site and homeport. The town is a submarine-oriented community containing both the Submarine Base and Electric Boat Shipyard (the construction yard for *Nautilus* and a major submarine construction yard today).

The concept for a nuclear powered submarine force was born in Washington, D.C., where it was nurtured and strongly supported by the United States Congress.

Site aesthetics:

Annapolis provides an excellent setting. The campus is very attractive and is tastefully tied to a maritime theme.

The Washington Navy Yard is in the midst of an historical renovation. The yard physical layout is being upgraded to further enhance appearance, while still retaining historically significant buildings, landmarks, etc.

The SUBASE Groton site has several undesirable features that cannot be eliminated. An operational railroad track runs within a few feet of the water's edge and would lie between the ship and the museum. A sewage pumping station, a commercial drycleaning establishment and an automotive repair center surround the entrance to the monument site (which would be very near the entrance to the SUBASE).

Tourist exposure:

Maximum tourist exposure is available at Annapolis. The Naval Academy Campus is a popular tourist attraction with approximately one and one half million people visiting annually.

The Washington Navy Yard contains two active museums and many historic artifacts displayed outside, which attract about 150 thousand tourists annually. Many millions of tourists who visit Washington, D.C., annually are potential visitors.

Tourist influx at SUBASE, Groton is small, however the Mystic area tourists would be potential visitors. Groton already has a submarine (ex-USS *Croaker* SS-246) on public display and several tours allow visitors to observe operating submarines at the SUBASE.

Cost estimates (FY-81 dollars):

[In millions of dollars]

	Washington	Groton	Annapolis
Site preparation	2.6	2.7	[1] 4.9
Ship preparation and towing	5.0	5.0	5.0
Total	7.6	7.7	9.9

[1] The cost difference at the Naval Academy is primarily due to dredging and rip rap (very large boulders now forming the sea wall) removal. Dredging at Groton and the Washington Navy Yard is minimal in comparison.

LAND ACQUISITION, NAVAL AIR STATION, BRUNSWICK, MAINE

Question. Is this part of the AICUZ program?

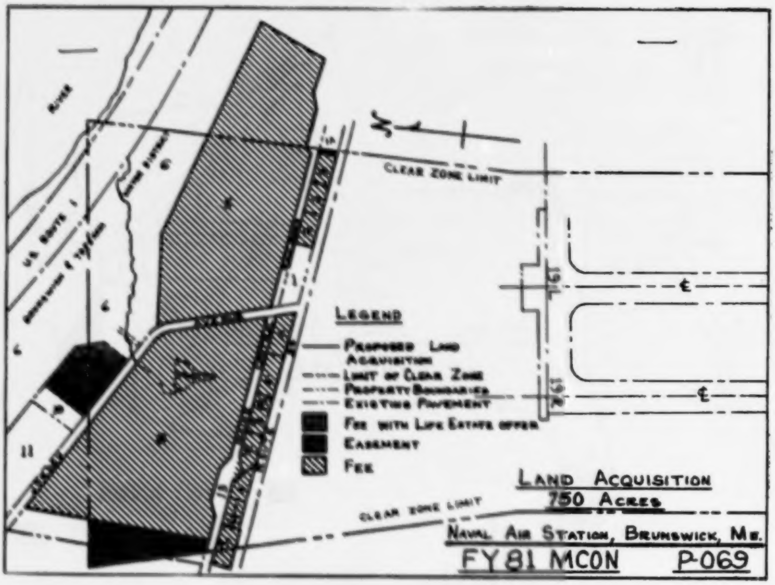
Answer. Yes.

Question. Why did you not get zoning or easements instead of proposing acquisition?

Answer. The proposed acquisition is in the clear zone, the first 3,000 feet off the end of the runway. Limited areas of easement are proposed in areas where this is practicable, given the required land use restrictions and residual value for the land. However, compatible land uses are so limited in this area of high accident potential that purchase is required in the balance of the areas.

Question. Provide a plan showing the area to be acquired.

Answer. A map is provided for the record.


RIVER
U.S. ROUTE 1
CLEAR ZONE LIMIT
LEGEND
PROPOSED LAND ACQUISITION
LIMIT OF CLEAR ZONE
PROPERTY BOUNDARIES
EXISTING PAVEMENT
FEE WITH LIFE ESTATE OFFER
EASEMENT
FEE
11
CLEAR ZONE LIMIT
LAND ACQUISITION
750 ACRES
NAVAL AIR STATION, BRUNSWICK, ME.
FY81 MCON
P-069

Question. What is the basis of your cost estimate?

Answer. The estimate is based on contract appraisals by Norman Gosline and Thomas J. Hennessey, Jr.

WATER SURVIVAL TRAINING FACILITY, NAVAL AIR STATION, JACKSONVILLE, FLORIDA

Question. Where is this training done now?

Answer. The MILCON project at NAS Jacksonville is primarily in support of the universal helicopter survival trainer, device 9D5, but the pool and support areas will be used for a variety of other water survival training such as parachute disentanglement and parachute drag. Water survival training in one form or another is now performed at most of the major helicopter and jet bases on both coasts. The universal helicopter survival trainer, 9D5, is a relatively new device which has proven to be very effective in increasing the survival rate of those involved in helicopter ditchings. The first 9D5 was installed at NAS Norfolk in 1980 using a 1979 MILCON project to provide the necessary facilities. Other 9D5s will be installed at NAS Miramar, MCAS El Toro and MCAS Cherry Point.

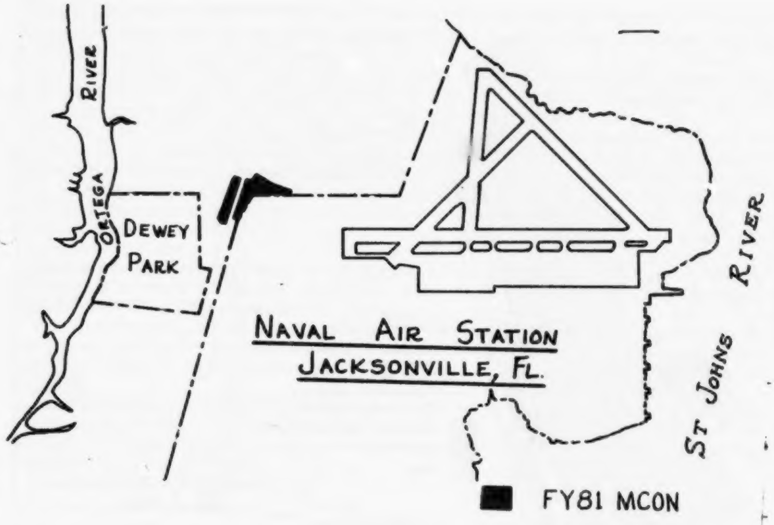
Question. Why not use existing facilities?

Answer. The existing pool at NAS Jacksonville is a recreational pool which is used for some phases of water survival. These courses use relatively small devices and equipment set-ups and can be securely stowed on the poolside when the pool is used for recreational purposes. The 9D5 device is a very large (six person) hydraulically controlled trainer that requires a large poolside support area as well as spaces for drying and scuba diver support. In addition, the pool is too wide for the 9D5s installation and the chance of pool water contamination from oil and hydraulic fluid is high. Also, with a device this large and complex the chance of vandalism and abuse is increased. The existing pool does not have space for equipment and clothes repair and drying or room for the mechanical system to operate the 9D5. When the new pool is complete several existing trainers and a couple of incoming small devices can be set-up in a dedicated training pool thus freeing-up the existing pool for recreational purposes.

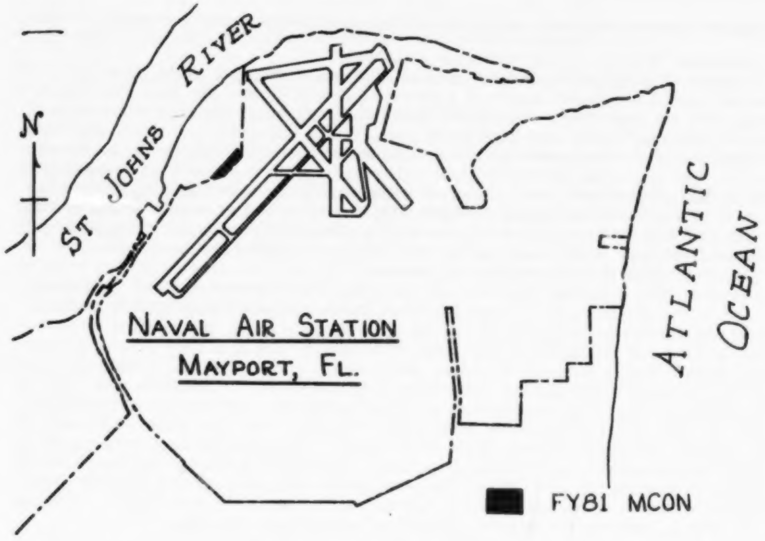
LAND ACQUISITION, NAVAL AIR STATION, JACKSONVILLE, FLORIDA

Question. Provide plans showing the land to be acquired.

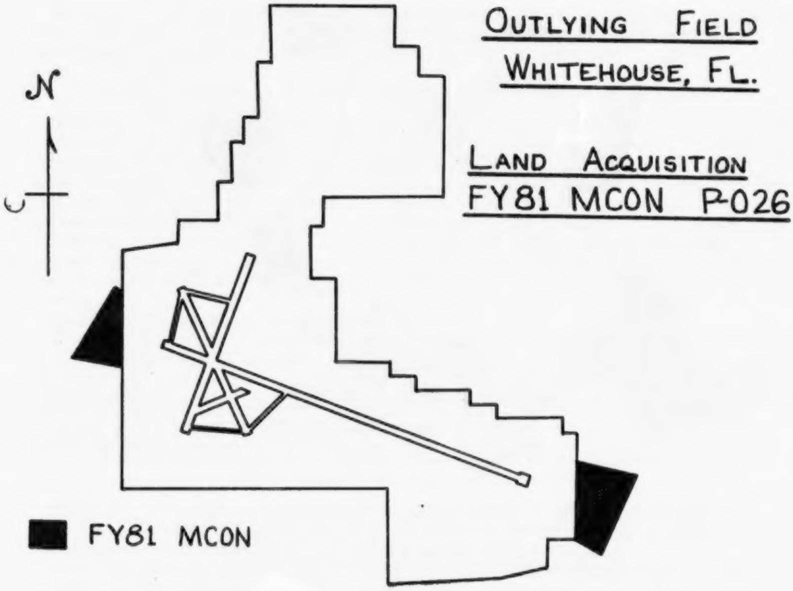
Answer. Maps are provided for the record.


Ortega River
Dewey Park
Naval Air Station
Jacksonville, Fl.
St Johns River
■ FY81 MCON

Land Acquisition
FY81 MCON P-026


N
St Johns River
Naval Air Station
Mayport, Fl.
Atlantic Ocean
■ FY81 MCON

Land Acquisition
FY81 MCON P-026



Question. Break out the cost estimate.

Answer. The cost of land at NAS Jacksonville is $617,000. The cost of land at OLF Whitehouse is $298,000. The cost of land at NS Mayport is $76,000. Relocation costs at NAS Jacksonville are $228,000. The contingency provision and allowance for supervision inspection and overhead is an additional $131,000.

Question. What is the basis of the cost estimate?

Answer. The cost estimates are based on contract appraisals by Walter Lampe and Earl Miller.

STEAM PLANT COAL CONVERSION, NAVAL AMPHIBIOUS BASE, LITTLE CREEK, VA.

Question. What is the EC ratio and the payback period for this project? Provide details for the record.

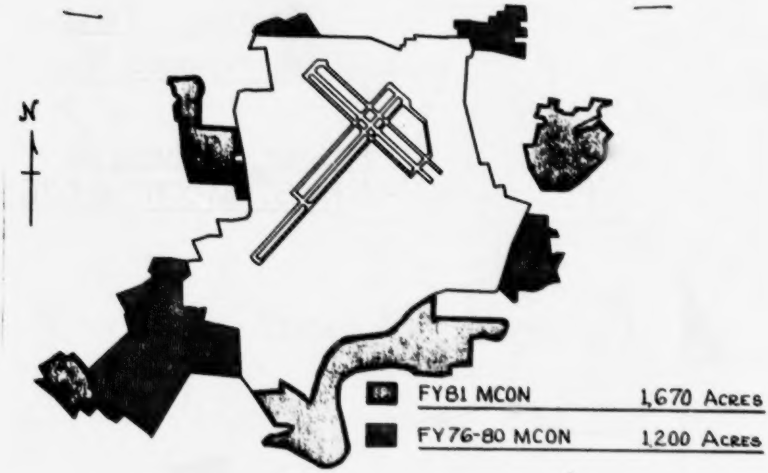
Answer. By defintion, EC ratio is the ratio of the energy saved in mega Btu per $1,000 investment. EC ratio does not apply in this case since a coal conversion merely changes the type of energy consumed from oil to coal with no net savings. In terms of the amount of oil displaced, i.e., 150,000 barrels per year, the EC ratio would be 107.

Simple payback for this project is 6.5 years.

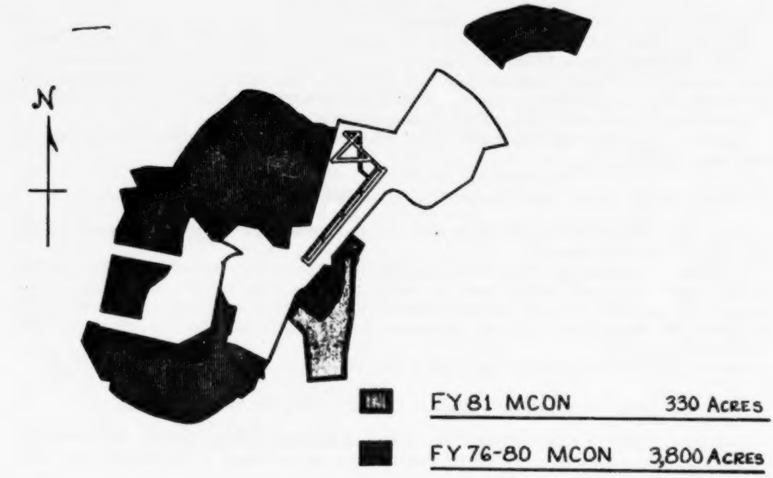
LAND ACQUISITION, NAVAL AIR STATION, OCEANA, VIRGINIA

Question. Provide plans identifying areas to be acquired and areas of easement.

Answer. All acquisition to be by restrictive use easement. Maps are provided for the record.


N
FY81 MCON 1,670 Acres
FY76-80 MCON 1,200 Acres

NAVAL AIR STATION, OCEANA, VA.
LAND ACQUISITION P-996


N
FY81 MCON 330 Acres
FY 76-80 MCON 3,800 Acres

NAVAL AUXILIARY LANDING FIELD, FENTRESS, VA.
LAND ACQUISITION P-996

Question. What is the basis of your estimate?

Answer. The cost estimate is based on contract appraisals by Berkley Pollock; D. L. McKnight; Economidis and Harry; J. Nolte, Jr.; and Nicholas Gretakis.

Question. Are you required to relocate many people? Will you resolve the existing complaints?

Answer. There is no relocation for this project. Since no improved properties are to be acquired in fee, the current residents will remain and will be subject to the same air operations that have caused the past complaints.

PIER IMPROVEMENTS, NAVAL AIR STATION, ALAMEDA, CALIFORNIA

Question. Explain the extremely high cost for "connection fee."

Answer. To meet increased Navy demand for electrical power, the City of Alameda proposes to feed the substation serving the Navy with a new 115 KV line. This will require installation of new transformers and switchgear to supply the Navy's 12 KV distribution system. The cost for upgrading the city-owned substation, attributable to the increased Navy demand, is estimated to be $1,600,000. The balance of the funds, $1,039,000 ($2,639,000–$1,600,000), is required for upgrading two electrical substations on the Naval Station, providing a new 12,000 KVA transformer and 15,000 linear feet of underground electrical system.

Question. Isn't this an O&M cost?

Answer. No. Traditionally the initial "connection fee" is a military construction item required to provide a complete and usable facility. Connection charges of this kind have been included in past military construction projects and funded. Once service has been provided, the power consumed is based on a "usage rate" which is funded with station O&M funds.

UNACCOMPANIED ENLISTED PERSONNEL HOUSING AND DINING FACILITY, NAVAL MAGAZINE, LUALUALEI, HAWAII

Question. When were the existing facilities built? What is their condition?

Answer. Original construction was in 1933. The structure is a permanent, concrete facility, but all interior work is in poor condition.

Question. How long have the existing facilities been occupied under a waiver?

Answer. The pier and wharf standards were developed by the Department of Defense, Explosives Safety Board in 1958. Prior to that time there was no waiver for this operation. The waivered condition was created immediately upon establishment of the criteria.

OPERATIONAL TRAINER FACILITY, FLEET BALLISTIC MISSILE SUBMARINE TRAINING CENTER, CHARLESTON, SOUTH CAROLINA

Question. The requirement for this project is not clear. Does it support Posiedon submarines?

Answer. The project will provide spaces for two training devices. The first device is a Submarine Navigational Piloting Trainer. It will train personnel in guiding the submarine through shallow and restricted waters where grounding is a potentially serious problem. It will also train personnel in the operation of inertial navigation systems, the Omega electronic navigation system, satellite navigation system and celestial navigation via the night visual star scene generator and periscope.

The second training device is a Submarine Damage Control Trainer. It will train the man-on-the-scene to combat physical damage to the submarine and its pipelines, using on-board damage control equipment. The trainer is a mock-up of a portion of the submarine and has a "get-wet" compartment, emergency air breathing systems, communications, a television monitoring system, and a high pressure water supply and treatment system. These trainers will be used for training both the attack and FBM-Poseidon submarine crews. Approval of the project will enhance the skill levels of the crews and ensure uneventful completion of submarine voyages.

Question. Why can't the training be done at Bangor?

Answer. The trainers at Bangor, Washington are designed for and will be fully utilized by the larger Trident submarine; additionally and more important, optimum training effectiveness could not be achieved if each submarine's crew had to be transported nearly 2,500 miles from Charleston to Bangor for the week long course.

NATIONAL NAVAL MEDICAL CENTER MODERNIZATION, BETHESDA, MARYLAND

Question. Was this Phase IV requirement included in previous testimony?

Answer. The entire modernization plan was presented to Congress when appropriation for Phase I was requested. Subsequent appropriation requests for Phases indicated the fact that follow-on portions of the project remained and would be presented at the proper time.

In the fiscal year 1979 hearings, Phase IV was included in the testimony at an estimated cost of $56 million. Subsequently, the phase was subdivided into two portions estimated at $23 million in fiscal year 1981 and $28 million in fiscal year 1983.

Question. Are there other phases?

Answer. Construction of the final portion is programmed in fiscal year 1983 at $28 million.

Question. The unit cost for renovation seems excessive. Justify.

Answer. The areas being renovated vary in age from about 20 to 40 years. Extensive upgrade of mechanical/electrical/fire protection systems is required due to their deterioration and, in some cases, their nonconformance with current codes. Much of the space to be renovated is for functions different from those presently there. This necessitates a significant amount of construction for partitions, ceiling, lighting, heating, ventilation, air conditioning, doors, etc. Limited contraactor ingress/egress to his work areas, due to the location of existing exterior doors, interior corridors, stairs and elevators, and the requirement for some existing functions in the building to continue operation during the renovation period, are other factors contributing to cost.

Due to the uniqueness of a renovation and the functions to be accommodated within it, realistic comparison of unit cost with other renovations, or even new construction, is extremely difficult, if not impractical. However, a very general comparison of the average unit cost $(79.20/SF) of the renovation portion of this project can be made with the new construction unit cost ($130.26/SF) of the acute care area in the Naval Regional Medical Center (NRMC) San Diego project, which is also in the fiscal year 1981 MCON program. Adjustment of the $130.26/SF for area cost factor and estimated award date, so as to be comparable with this project, results in a figure of about $111.00/SF. Therefore, as a very general comparison, the average unit cost for renovation in the Bethesda project is about 71 percent of the adjusted new construction unit cost of the NRMC San Diego acute care area.

Question. Why shouldn't part of this cost be covered by NAF?

Answer. The patient welfare functions are now in the existing hospital building. The design for this project reflects an optimum floor plan arrangement for all functions to be accommodated taking into consideration functional relationships, adjacencies, ingress/egress and the configuration of the structure. As a result, the existing patient welfare functions are being relocated to a centrally accessible area which is compatible with the foregoing design rationale. When an existing function is displaced by a military construction funded project, that project's funds pay for the replacement of the displaced function provided that the function remains a valid requirement. The patient welfare functions in this project are valid requirements.

NAVAL REGIONAL MEDICAL CENTER, SAN DIEGO, CALIFORNIA

Question. There has been a great deal of controversy surrounding this project. Why does the Navy seek title to the land rather than a long-term lease? Explain how the lease-acquisition controversy occurred.

Answer. The Navy normally acquired fee title to land upon which it places permanent improvements, except in special circumstances most often at overseas bases where fee title cannot be obtained. Fee title is acquired so that the Navy can continue to spend the sums necessary to maintain and make the improvements necessary to keep facilities in first class condition without the prospect of losing its investment upon the expiration of its lease or other termination of interest. For example, the Navy is now spending $160 million to bring to first class condition the facilities at the National Naval Medical Center, Bethesda, which are over 40 years old, and is planning to spend about $290 million to bring to first class condition the facilities at San Diego which are in some instances about 60 years old. The Comptroller General and the Attorney General have both held that permanent improvements may not be made upon land held subject to return after expiration of leases or for other causes.

This rule of prudence and of law is, of course, subject to the exception that Congress may expressly authorize permanent improvements upon a leasehold.

In Section 616 of Public Law 95–82 Congress did expressly authorize construction of the new San Diego Naval Regional Medical Center upon leased land, and the Navy made every effort to accomplish the land acquisition upon that basis. Had the hospital been built upon the leasehold, the Navy would either have lost the hospital upon expiration of the lease or have been obligated then to condemn further interest. However, when the Department of Justice was unwilling to condemn under that authority and the City Council decided that it could not make a lease without two-thirds voter approval, and did not obtain that approval, that authority failed. The Navy's principal option at that point was to seek the normal authority to condemn a fee. Section 809 of Public Law 96–125 provided such authority and permits settlement by land exchange. The Navy has acquired the fee and is willing to settle by land exchange.

Question. What is your position on H.R. 6784?

Answer. H.R. 6784 directs the Secretary of the Navy to reconvey the San Diego hospital site for a leasehold. The Navy considers that the fee title it has already acquired is adequate to support the investment of $290 million for a medical center. If Congress desires the center to be built upon an interest allowing the City to recover the site for park use after hospital use ceases, the proper interest would be for the City to retain a reverter. H.R. 6784 as now written appears technically defective to accomplish its intended purpose.

Question. Provide details for the record showing how the hospital size was determined.

Answer. The sizing of the hospital for acute care beds was based on the GAO developed, DOD approved sizing model, with authorized additions for Champus and retired and dependents of retired. On this basis, a requirement was established for 529 acute care beds; however, during design, it was apparent that it was most economical and feasible, from an operational standpoint, to provide acute care in 40-bed modules. Therefore, a decision was made to provide 560 beds to insure that all categories of beneficiary were covered.

The light care bed requirement was based on actual experienced Average Daily Patient Load at the hospital which indicated a requirement of 277 beds. Modules of 50 beds are being used for this care. Therefore, a decision was made to provide light care at 250 beds.

WATER PIT FACILITY, PUGET SOUND NAVAL SHIPYARD, BREMERTON, WASHINGTON

Question. This project is quite controversial. What nuclear services (and on what ships) does this shipyard now provide?

Answer. This yard currently has the capability for overhaul, repair and refueling of nuclear powered submarines and surface craft.

Question. Can the new facility at Bangor handle refueling or reactor servicing operations on the Trident?

Answer. There will be no facilities at Bangor that will have the capability for nuclear refueling or reactor servicing on the Trident submarines. The proposed Water Pit Facility at NSY Puget Sound will have the capability for Trident nuclear refueling and reactor servicing.

Question. Does the justification for this project hinge on the need to be able to handle nuclear carriers?

Answer. Yes. The Water Pit Facility is required to provide the Puget Sound Shipyard with the capability which it does not now possess for refueling nuclear powered aircraft carriers.

Question. For the current inventory of nuclear carriers, it appears that the capability at Norfolk to handle nuclear servicing is adequate. Do you agree?

Answer. The nuclear Fleet currently consists of three aircraft carriers, eight cruisers and 115 submarines. In addition, two nuclear powered carriers, one cruiser, 25 attack submarines and eight Tridents have been authorized through Fiscal year 1980. To adequately support this large and expanding Fleet, the Navy needs reactor servicing capability on the West Coast for all ship types, including aircraft carriers.

Question. Have you done an EIS on this project?

Answer. Navy has completed an Environmental Impact Assessment on the project. The Environmental Protection Agency has reviewed this assessment as well as EPA and Navy reports on the radiological effects of shipyard operations and on Navy nuclear operations in general. In addition, EPA has been briefed on Navy's environmental assessment process and the design of the project including features designed to minimize the risks of accidents. Based on this review and discussions with Navy personnel, the EPA concluded that the Environmental Impact Assessment is technically adequate and concurred with the Navy's findings that the proposed project would not have significant environmental consequences.

PLATING SHOP ALTERATIONS, CHARLESTON NAVAL SHIPYARD, CHARLESTON, S.C.

Question. Provide additional details as to why this project is needed.

Answer. The existing plating facility was constructed as a part of fiscal year 1973 P-619, Inside Machine Shop, which was awarded on 25 September 1974. Although the final design was less than optimal, it was reviewed and approved by operating personnel, and was determined to be the best design possible considering safety criteria then applicable. The revised OSHA standards for Federal installations were subsequently promulgated by Executive Order 11807 dated 24 September 1974. This resulted in the initiation of several studies by the Shipyard, concurrent with ongoing construction, as to the impact of the need for OSHA compliance. Construction was completed in September 1976, but the plating facility was not placed in operation because it did not comply with the then current OSHA Regulation 40 CFR 27400 of 27 June 1955. The previously initiated studies were completed in October 1978, and led to the conclusion that the plating facility should be converted to a non-cyanide process as the most economical way to correct the situation. In addition to the necessity to correct the OSHA safety hazards, the industrial waste treatment facilities were not in compliance with proposed EPA Effluent Guidelines which became effective in September 1979. It was therefore necessary to program a new fiscal year 1981 MCON project to correct these problems.

Question. How much did the original project cost? Who designed it?

Answer. The plating shop to be converted from a cyanide to a non-cyanide process was constructed as a portion of the FY 1973 MCON project P-619, Inside Machine Shop. The shop occupies 8,000 square feet of a new building of 36,555 square feet. The entire project was accomplished under one contract and there is no separate cost available for only the plating shop portion of the project. The Current Working Estimate for the entire project is $7,500,000.

Prior to the initiation of final plans and specifications for the original project, the Navy had obtained an Industrial Engineering Study which established such criteria as size and configuration of the building, and volume of work to be accomplished. This study was done by the H. K. Ferguson Company of Cleveland, Ohio. Final plans and specifications were done by the J. E. Sirrine Company of Greenville, South Carolina.

Question. How could the original design have been so deficient that you could not even start up the facility?

Answer. The plant could have been started up and placed in operation. The design was not deficient as far as plating operations were concerned. The problem was safety considerations due to OSHA regulations that became effective subsequent to the design and award of a construction contract for the facility.

Question. Has any attempt been made to fix the cause for this unfortunate situation?

Answer. Yes. Due to the magnitude and complexity of design and construction for this type facility, special management attention is being directed to insure additional engineering input and review from inception to completion of the project.

Question. How are you getting your plating done now? Would it be more cost effective to continue "as is" rather than spend this money?

Answer. An existing obsolete facility that does not meet medical or OSHA standards is being used when necessary. The remaining work is contracted out.

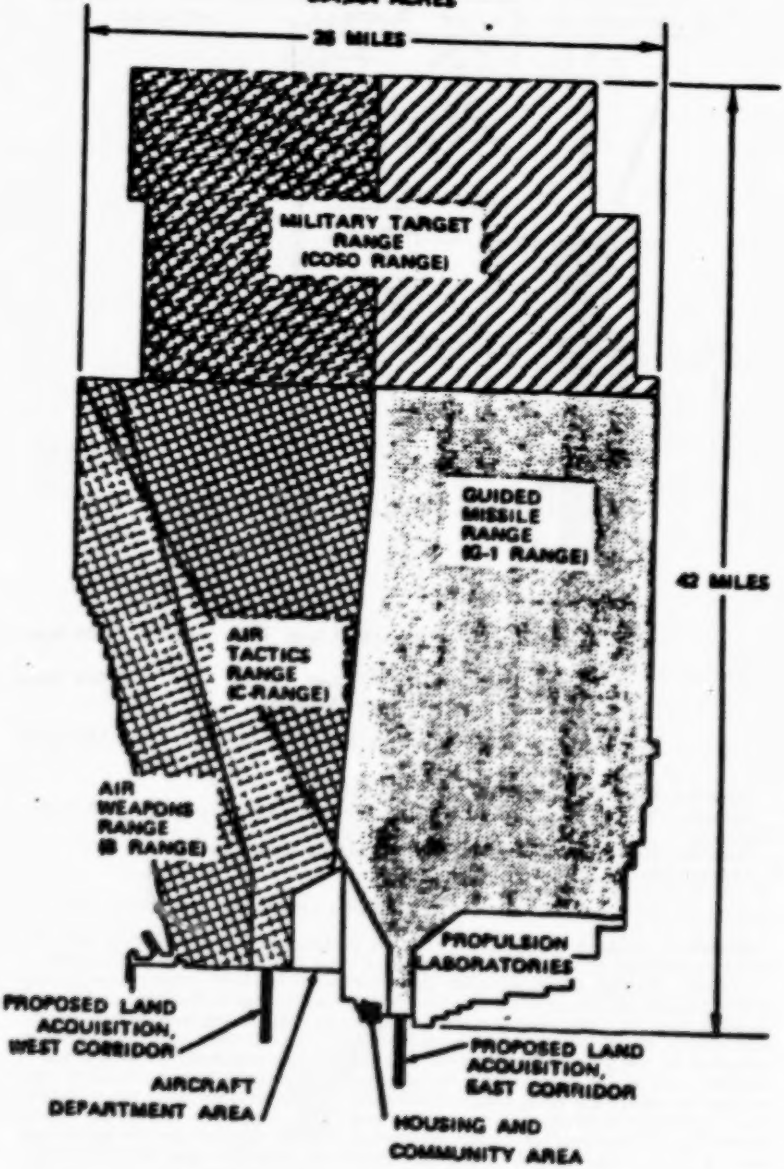
The continued use of the old facility is not acceptable due to violation of OSHA requirements. The most cost effective solution to correct the situation is to convert to a non-cyanide process as proposed by this project.

LAND ACQUISITION, NAVAL WEAPONS CENTER, CHINA LAKE, CALIF.

Question. Provide an overlay showing areas to be acquired and areas to be exchanged.

Answer. Maps are provided for the record.

CHINA LAKE COMPLEX
604,864 ACRES

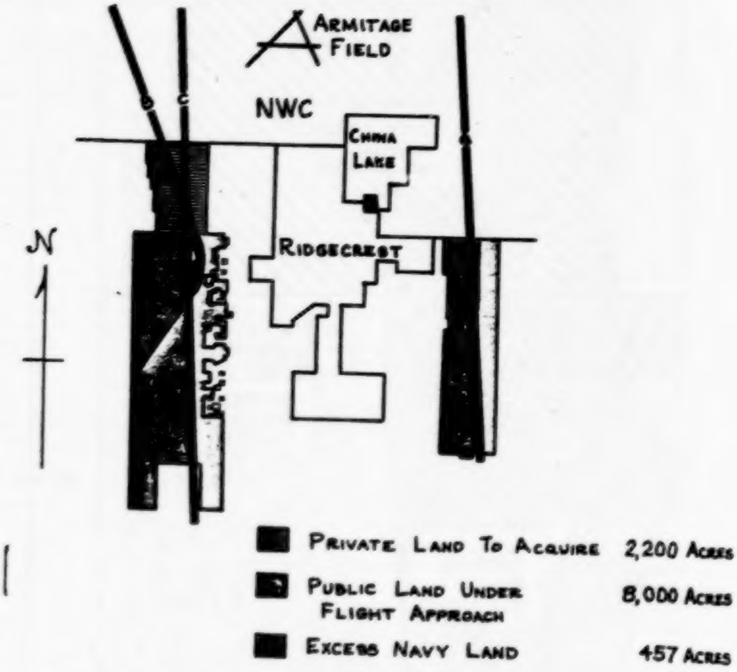

26 MILES
42 MILES
MILITARY TARGET RANGE (COSO RANGE)
GUIDED MISSILE RANGE (G-1 RANGE)
AIR TACTICS RANGE (C-RANGE)
AIR WEAPONS RANGE (B RANGE)
PROPULSION LABORATORIES
PROPOSED LAND ACQUISITION, WEST CORRIDOR
AIRCRAFT DEPARTMENT AREA
PROPOSED LAND ACQUISITION, EAST CORRIDOR
HOUSING AND COMMUNITY AREA

LOCATION MAP

NAVAL WEAPONS CENTER, CHINA LAKE, CA.

ACQUISITION OF RANGE APPROACH CORRIDORS

FY81 MCON P-159


ARMITAGE FIELD
NWC
CHINA LAKE
RIDGECREST
N
PRIVATE LAND TO ACQUIRE 2,200 ACRES
PUBLIC LAND UNDER FLIGHT APPROACH 8,000 ACRES
EXCESS NAVY LAND 457 ACRES

Question. What is the basis of your estimate?

Answer. The estimate is based on a contract appraisal by Karpe and Fisher Company.

Question. Have you exhausted lower cost alternatives (zoning, etc.)?

Answer. Yes.

PLATING FACILITY IMPROVEMENTS, NORFOLK NAVAL SHIPYARD, PORTSMOUTH, VIRGINIA

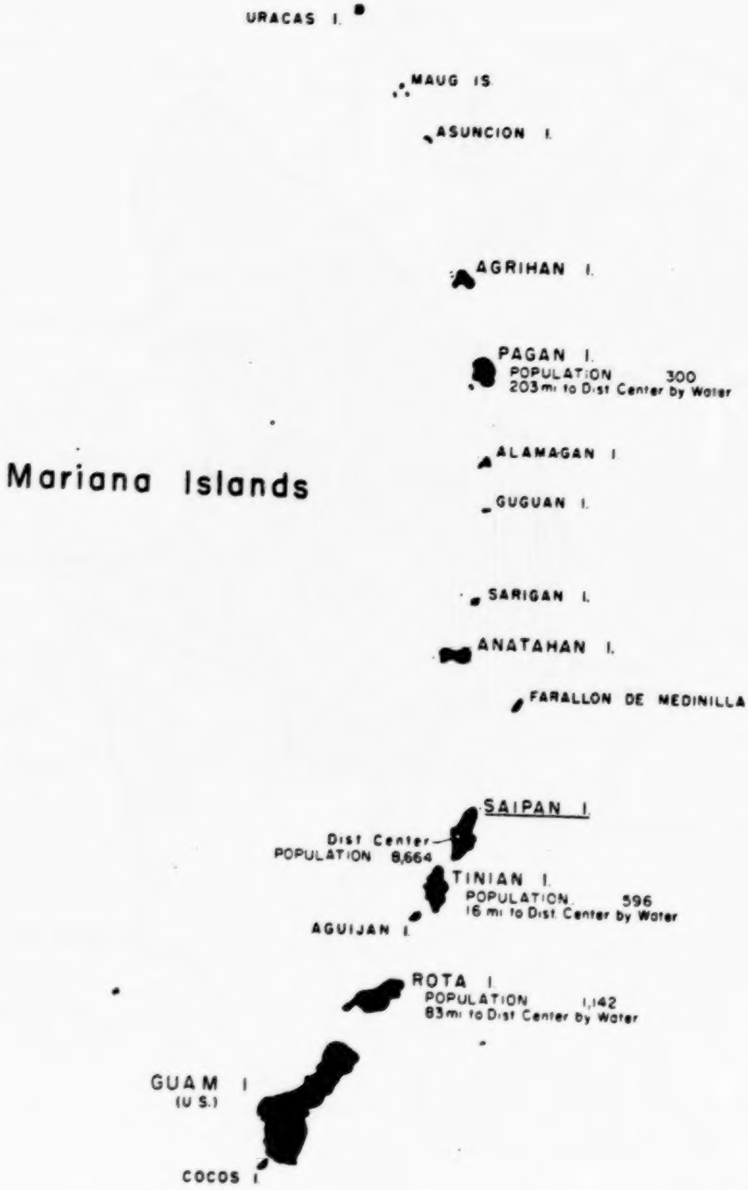
Question. Compare this project with the plating shop at Charleston. Are you going to continue to use cyanide here? If so, why can't it be used at Charleston?

Answer. Plating shops at both locations were initially constructed to use cyanide in the plating process. The Charleston facility was authorized and funded in fiscal year 1973 and designed and constructed prior to implementation of current OSHA standards as was the older facility at Norfolk. The modifications proposed in the project for Norfolk will permit the continuation of the use of cyanide. At Charleston however, modifications are proposed on the basis of converting the existing plating shop for utilization of electrolytes other than cyanide. These solutions to methods for implementing OSHA standards follow the recommendations of engineering studies conducted at both locations by the same engineering firm. In the case of Charleston, there will be a one time investment savings of $200,000 by modifying the facility as proposed rather than for continued use of cyanide.

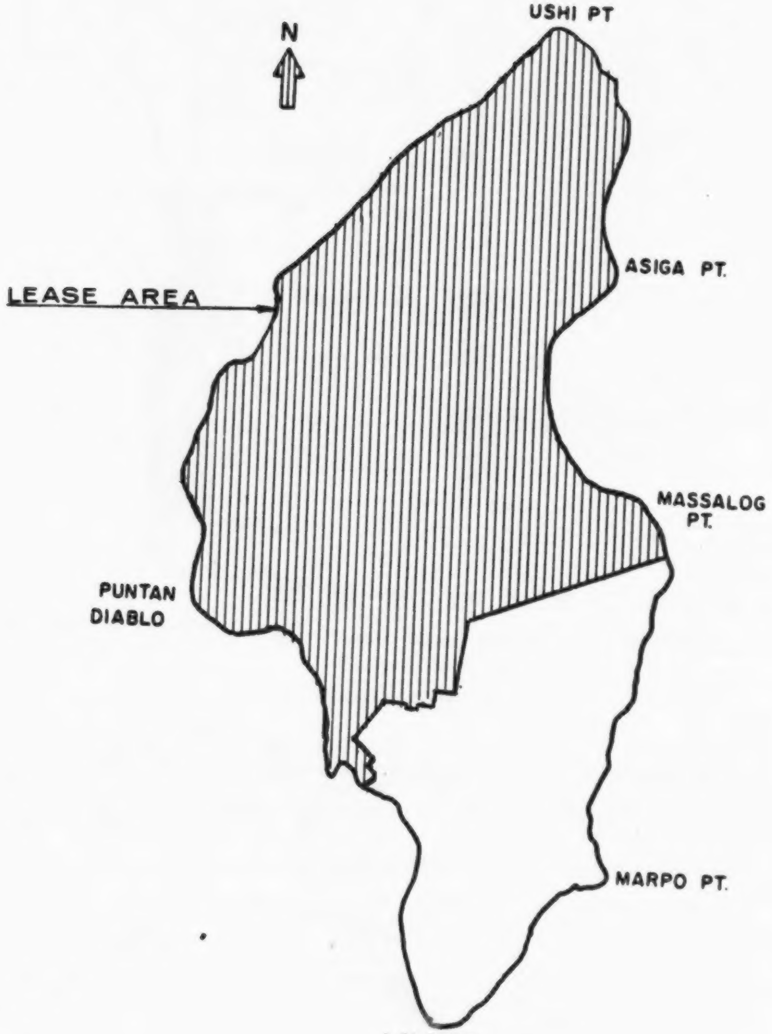
LAND ACQUISITION, DEFENSE INSTALLATION, MARIANA ISLANDS

Question. Provide a map showing the areas to be released.

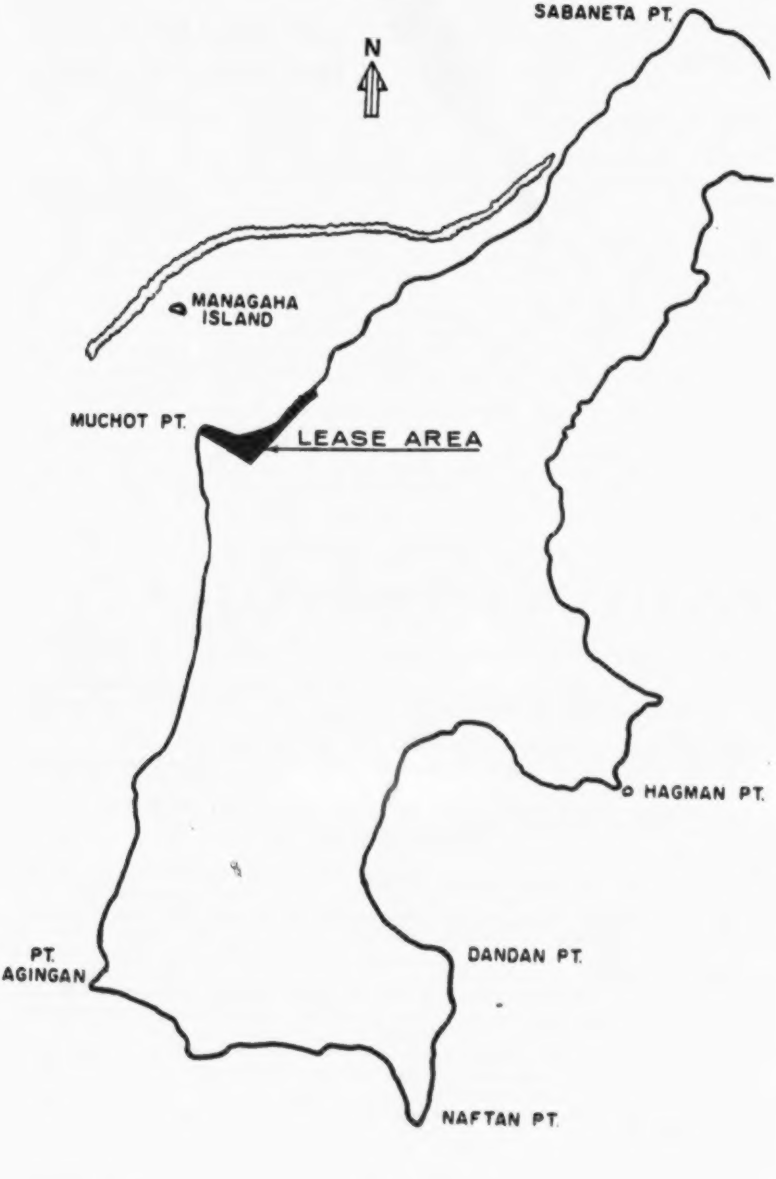
Answer. Maps are provided for the record.

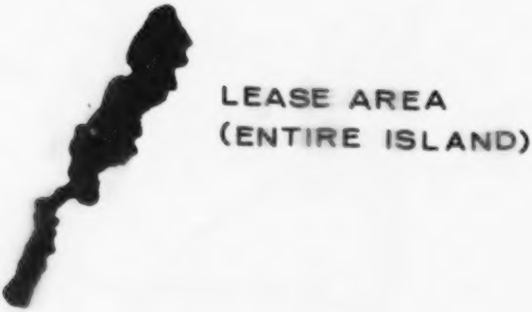

URACAS I.
MAUG IS.
ASUNCION I.
AGRIHAN I.
PAGAN I.
POPULATION 300
203 mi to Dist Center by Water
Mariana Islands
ALAMAGAN I.
GUGUAN I.
SARIGAN I.
ANATAHAN I.
FARALLON DE MEDINILLA
SAIPAN I.
Dist Center
POPULATION 8,664
TINIAN I.
POPULATION 596
16 mi to Dist. Center by Water
AGUIJAN I.
ROTA I.
POPULATION 1,142
83 mi to Dist Center by Water
GUAM I
(U.S.)
COCOS I.

TINIAN


N
USHI PT
ASIGA PT.
LEASE AREA
MASSALOG PT.
PUNTAN DIABLO
MARPO PT.
LALO PT.

SAIPAN


SABANETA PT.
N
MANAGAHA ISLAND
MUCHOT PT.
LEASE AREA
HAGMAN PT.
PT. AGINGAN
DANDAN PT.
NAFTAN PT.



FARALLON DE MEDINILLA

Question. Could the United States agree to lease only a part of this package (e.g. the bombing range)?

Answer. The entire land area is agreed to as a part of the covenant establishing the Commonwealth of the Northern Mariana Islands and detailed in Sections 802 and 803.

Question. How was the original $19 million determined?

Answer. The cost and escalation factors are the result of negotiated settlement between the parties.

Question. Provide Sections 802 and 803 of the covenant for the record.

Answer. The information follows:

Section 802

(a) The following property will be made available to the Government of the United States by lease to enable it to carry out its defense responsibilities:

(1) on Tinian Island, approximately 17,799 acres (7,203 hectares) and the waters immediately adjacent thereto;

(2) on Saipan Island, approximately 177 acres (72 hectares) at Tanapag Harbor; and

(3) on Farallon de Medinilla Island, approximately 206 acres (83 hectares) encompassing the entire island, and the waters immediately adjacent thereto.

(b) The United States affirms that it has no present need for or present intention to acquire any greater interest in property listed above than that which is granted to it under Subsection 803(a), or to acquire any property in addition to that listed in Subsection (a), above, in order to carry out its defense responsibilities.

Section 803

(a) The Government of the Northern Mariana Islands will lease the property described in Subsection 802(a) to the Government of the United States for a term of fifty years, and the Government of the United States will have the option of renewing this lease for all or part of such property for an additional term of fifty years if it so desires at the end of the first term.

(b) The Government of the United States will pay to the Government of the Northern Mariana Islands in full settlement of this lease, including the second fifty year term of the lease if extended under the renewal option, the total sum of $19,520,600, determined as follows:

(1) for that property on Tinian Island, $17.5 million;

(2) for that property at Tanapag Harbor on Saipan Island, $2 million; and

(3) for that property known as Farallon de Medinilla, $20,600.

The sum stated in this Subsection will be adjusted by a percentage which will be the same as the percentage change in the United States Department of Commerce composite price index from the date of signing the Covenant.

(c) A separate Technical Agreement Regarding Use of Land To Be Leased by the United States in the Northern Mariana Islands will be executed simultaneously with this Covenant. The terms of the lease to the United States will be in accordance with this Section and with the terms of the Technical Agreement. The Technical Agreement will also contain terms relating to the leaseback of property, to the joint use arrangements for San Jose Harbor and West Field on Tinian Island, and to the principles which will govern the social structure relations between the United States military and the Northern Mariana Islands civil authorities.

(d) From the property to be leased to it in accordance with this Covenant the Government of the United States will lease back to the Government of the Northern Mariana Islands, in accordance with the Technical Agreement, for the sum of one dollar per acre per year, approximately 6,458 acres (2,614 hectares) on Tinian Island and approximately 44 acres (18 hectares) at Tanapag Harbor on Saipan Island, which will be used for purposes compatible with their intended military use.

(e) From the property to be leased to it at Tanapag Harbor on Saipan Island the Government of the United States will make available to the Government of the Northern Mariana Islands 133 acres (54 hectares) at no cost. This property will be set aside for public use as an American memorial park to honor the American and Marianas dead in the World War II Marianas Campaign. The $2 million received from the Government of the United States for the lease of this property will be placed into a trust fund, and used for the development and maintenance of the park in accordance with the Technical Agreement.

Question. What would be the terms of the lease? Would the United States have unrestricted right to use the land as desired?

Answer. The terms are detailed in the "Technical Agreement Regarding Use of Land to be Leased by the United States in the Northern Mariana Islands" which is provided for the record.

TECHNICAL AGREEMENT REGARDING USE OF LAND TO BE LEASED BY THE UNITED STATES IN THE NORTHERN MARIANA ISLANDS

The duly authroized representatives of the United States and the people of the Northern Mariana Islands,

Considering that they have today entered into a formal Covenant to establish a Commonwealth of the Northern Mariana Islands in political union with the United States;

Recognizing that Sections 802 and 803 of that Covenant contain provisions relating to the use of land to be leased by the United States in the Northern Mariana Islands for defense purposes;

Noting that the extent of land required for use by the United States has been determined and the precise boundaries agreed upon by both parties hereto, and

Desiring that all basic arrangements relative to land be reduced to a formal land agreement;

Have now entered into the following Technical Agreement which will be deemed to have been approved when the District Legislature of the Mariana Islands District of the Trust Territory of the Pacific Islands approves the Covenant, and which will become effective on the date that Sections 802 and 803 of the Covenant come into force.

Part I. Matters to be Included in Land Leases With the United States

1. Description

Lands to be leased by the United States for defense purposes are set forth in Section 802 of the Covenant and are further described and depicted on the maps attached as Exhibits A, B, and C.

2. Acquisition

The Government of the Northern Mariana Islands or the legal land entity established by the Marianas District Legislature to receive and administer public lands in the Northern Mariana Islands, immediately upon request, will execute the lease for the lands being conveyed to the United States Government as described in paragraph 1, above, with the duly authorized representatives of the United States under the terms set forth in Section 803 of the Covenant.

Payment under the lease will be made as soon as practicable after the appropriation of funds by the Congress of the United States. The United States may enjoy full and unrestricted use of the land immediately upon making the above payment. The amount to be paid will be adjusted at the time of payment by a percentage which is the same as the percentage change, up or down, in the United States Department of Commerce composite price index from the date of signing of the Covenant.

Should payment not be made within five years from the date that Sections 802 and 803 of the Covenant come into force, then this Agreement will automatically terminate and both parties will be released from all liability or obligations created by this Agreement and Sections 802 and 803 of the Covenant.

Settlement of Claims and Encumbrances

Lands leased by the United States Government defined in paragraph 1, above, subject to the lease of the Micronesian Development Corporation, which will be allowed to continue in accordance with its terms. All other encumbrances on or any adverse possession of lands described in paragraph 1, above, will be removed and all existing claims will be settled by the Government of the Northern Mariana Islands or by the legal entity at no additional cost to the United States Government. The United States Government will, however, pay all Title II benefits due under the Uniform Relocation and Real Property Acquisition Policies Act of 1970.

The United States Government and the Government of the Northern Mariana Islands will consult and coordinate on specific actions by either party that may affect or involve possible adjustment or termination of the Micronesian Development Corporation lease. Both parties will render full assistance to the other towards achieving specific needs with respect to the Micronesian Development Corporation lease, to include either compliance with the terms of the lease, amendments to the lease, or action to terminate the lease. In no event will either party impede the action of the other with respect to the Micronesian Development Corporation lease. The United States Government will be responsible for damages resulting from a breach of early termination of the Micronesian Development Corporation lease resulting solely from United States initiatives. The Government of the Northern Mariana Islands will be responsible for damages resulting from a breach or early termination resulting solely from its initiatives. Both the United States Government and the Government of the Northern Mariana Islands or its legal entity will hold the other harmless from all claims arising by reason of such breaches or termination.

4. Disposal

Should the property leased to the United States on Tinian not be required for the needs or the discharge of the responsibilities of the United States Government, or otherwise become surplus property under United States law, the Government of the Northern Mariana Islands or the legal entity will be given first opportunity to acquire the interest of the Government of the United States in such property in accordance with United States law.

5. Leasebacks.

A. Tinian.

(1) *General.*—A total of approximately 6,458 acres (2,614 hectares) out of a total of approximately 17,799 acres (7,203 hectares) on Tinian will be leased back from the land on Tinian described in paragraph 1, above, at such time as

the lease to the United States Government for the land on Tinian becomes effective. All leasebacks on Tinian made pursuant to this Agreement will be subject to the following restrictions which will be contained in the leases and will be incorporated in any subleases executed by the Government of the Northern Mariana Islands or by the legal entity.

a. Uses of land must be compatible with planned military activities;

b. There will be no permanent construction without prior consent;

c. Federal Aviation Administration safety zone areas apply with respect to land use;

d. Uses that damage or have a detrimental effect on subsequent use of the land will not be permitted;

e. All leasebacks will be subject to cancellation upon one year's notice, or sooner in the event of urgent military requirement or national emergency; and

f. Provisions for fair compensation in the event of cancellation or early termination will be included.

(2) *Area South of Present West Field.*—Approximately 1,335 acres (540 hectares) lying south of West Field including the harbor area, as indicated in Exhibit A, will be made available to the Government of the Northern Mariana Islands or the legal entity under leaseback. This leaseback will be for a term of ten years with renewal rights for an additional ten years upon the approval of the United States Government, except for the harbor area which will be on a five year basis renewable with United States Government approval. These leasebacks will be for the sum of one dollar per acre per year. The Government of the Northern Mariana Islands or the legal entity may be in turn sub-lease these lands on terms compatible with the leaseback, with such sub-lease subject to immediate revocation in the event of violation of their terms. Permissible uses are grazing, agriculture that does not interfere with flight safety, and other possible uses that may be approved from time to time by the United States Government.

(3) *Area North of Present West Field and East of Broadway.*—The lands north of West Field and east of Broadway, indicated in Exhibit A, will continue to be used in accordance with the terms and conditions of the current lease with the Micronesian Development Corporation. This includes approximately 4,010 acres (1,623 hectares).

(4) *Military Maneuver Area on Tinian—Grazing Leases.*—The United States will lease back the land within all but two of the existing grazing leases in the proposed maneuver area north of West Field shown in Exhibit A.

Substitute grazing leases will be made available within areas set aside for maneuvers north of West Field for the two leases indicated in Exhibit A which are presently located in areas with a high probability of their being used by United States forces, which renders them unsuitable for leaseback. This agreement is limited to accommodation of persons actually using this leased land for grazing purposes as of December 19, 1974. All such leases will be for five years at one dollar per acre per year, renewable with United States Government approval for additional periods of up to five years and subject to immediate revocation in the event of violation of their terms. Grazing will be the only use permitted unless authorized by the United States Government. Approximately 610 acres (247 hectares) will be leased back in this category.

(5) *Military Maneuver Area on Tinian—Present Private Owners.*—There are 38 deeded homestead parcels and six pending homesteads in the maneuver area as indicated in Exhibit A. The Government of the Northern Mariana Islands or the legal entity will acquire the land at no additional cost to the United States Government and will provide an opportunity for the owners of these homesteads who may be eligible for new homesteads as a result of their displacement to exchange their land with comparable lands outside the military area. The homestead owners will be fully compensated by the Government of the Northern Mariana Islands or by the legal entity if they do not choose this exchange and will, in addition, receive from the United States Government whatever relocation compensation and assistance to which they would be entitled under United States law.

After this land now held as homesteads is acquired by the United States Government of the Northern Mariana Islands or from the legal entity the United States Government will, on a case-by-case basis and on request, lease it back to those former owners who wish to continue to farm the land for periods of five years at one dollar per acre per year, renewable with United States approval for additional periods of up to five years. Approximately 503 acres (204 hectares) are involved in this category.

(6) *Civilian Aviation Terminal Facilities, West Field.*—The present existing civilian air terminal may remain until its relocation is determined to be necessary by the United States Government. Sufficient land will be made available at nominal cost adjacent to the present or a future runway for civilian terminal facilities, including aprons, aircraft parking, terminal building(s), automobile parking and roadways. If a future relocation becomes necessary, the United States will reimburse the Government of the Northern Mariana Islands for fair value of the then-existing terminal building and make alternate land available at nominal cost as near to the runways and related taxiways as practicable for construction by the Government of the Northern Mariana Islands of new terminal facilities. The costs of again relocating the terminal facilities, along with construction costs for necessary replacement of apron and parking areas, will be borne by the United States Government. Ample land provision will be made, also at nominal cost, for necessary growth and expansion of the civilian facility.

B. Saipan—Tanapag Harbor

The United States Government will make available to the Government of the Northern Mariana Islands without cost 133 acres (53.8 hectares) out of the 177 acres (71.6 hectares) leased to the United States Government at Tanapag Harbor, as indicated in Exhibit B. This area will be set aside for public use as an American memorial park to honor the American and Marianas dead in the World War II Marianas campaign. Two million dollars ($2,000,000) of the total funds paid by the United States Government will be placed in a trust fund by the Government of the Northern Mariana Islands, or by the legal entity, with income from the fund used to develop and maintain the memorial park. Income from this trust fund may be utilized for other purposes only with the concurrence of the United States Government. The United States will assist in this development by providing assistance in planning and technical advice. Adequate space will be provided the United States Government to construct at its expense a memorial to the Americans who died in the Marianas campaign. In addition, the Government of the Northern Mariana Islands may erect its own memorial to Marianas war dead at its expense. The remaining 44 acres (17.8 hectares) will be made available to the Government of the Northern Mariana Islands or to the legal entity by leaseback on the same terms and conditions named in paragraph 5A(1), above, as appropriate. Uses of the 44 acres must be harbor-related as determined by the United States. The definition of harbor-related activities will be made available to the Government of the Northern Mariana Islands on request and incorporated in subleases in the area. Leases will be for ten years and will be automatically renewable.

C. Other Leasebacks

The Government of the United States may from time to time lease back other land temporarily in excess within the land described in paragraph 1, above, to the Government of the Northern Mariana Islands or to the legal entity in accordance with applicable laws and regulations.

Part II. Joint Use

The Government of the United States or its duly authorized representative will enter into joint use agreements with a duly authorized agency or agencies of the Government of the Northern Mariana Islands, when such agency or agencies have been established by the Government of the Northern Mariana Islands, which will cover among other things the following:

1. San Jose Harbor, Tinian

San Jose Harbor will initially be under Government of the Northern Mariana Islands control under specific terms of the leaseback. If a decision is made by the Department of Defense to implement plans for an operational joint service base on Tinian, appropriate joint control arrangements will be agreed upon for the construction and subsequent periods to accommodate the needs of the civilian community along with military needs. At such time as joint control arrangements become necessary, the feasibility of adopting standards which will permit uninterrupted commercial shipping operations during fuel transfer operations will be investigated so as to minimize the possible interference with civilian activity. When the United States upgrades the existing harbor the Government of the Northern Mariana Islands will upgrade its approximately 600 feet of wharf space or reimburse the United States for having such services performed as part of the United States construction project.

With respect to the two plots totalling approximately nine acres (3.6 hectares) immediately adjacent to the 600 foot civilian wharf shown in Exhibit A, the Government of the Northern Mariana Islands will place appropriate restrictions on their use for harbor-related activities only.

2. *West Field, Tinian*

A. *General Use.*—For aviation purposes the Government of the Northern Mariana Islands and the civilian community of Tinian will have continuous joint use of West Field with exceptions for safety of flight and priority military operations. The Government of the Northern Mariana Islands will have operational responsibility for West Field, except during periods of military use, until the United States assumes permanent operational responsibility. During such periods the Department of Defense will assume operational responsibility and control.

B. *Development Costs.*—The cost of improving and maintaining present civilian terminal facilities and future civilian terminal facilities will be borne by the Government of the Northern Mariana Islands.

C. *Fuel Supplies.*—After the United States military takes over control and management of the field standard military aviation fuels and oils will be supplied as soon as they become available, subject to Federal Energy Administration allocation, on a cost basis by the Government of the United States to the Government of the Northern Mariana Islands for civil and compatible commercial aviation needs on Tinian. It is understood that provision of such fuels and oils will not be permitted to compete with private commercial enterprises performing this service.

D. *Terminal Utilities.*—The Government of the United States during its planning of future base facilities will take into consideration the needs of the future civilian terminal area for water, power, telephone and other utilities applicable to a terminal facility so as to make available to the civilian terminal appropriate utility hookups to the closest practicable locations to allow for civilian development of these utilities and joint use thereafter on a reimbursable basis.

E. *Use of Present Facilities.*—The use of facilities presently in existence at the West Field location and the use of the present air strip will continue on an uninterrupted basis prior to, during and subsequent to initial construction upgrade and during any future improvement program to the greatest extent possible. There will be close coordination with the Government of the Northern Mariana Islands to insure as little hardship as possible should interruptions of the use of the present West Field and its terminal facilities be necessary for military operations such as maneuvers. The use of a runway and taxiways may be curtailed from time to time to allow appropriate and adequate construction and repair work to be accomplished. This construction and repair work will at all times be coordinated with the civilian community so as to minimize any hardships involved.

F. *United States Facilities.*—When an operational military airfield is established at West Field, Tinian, the United States Government will provide such aircraft and structural fire protection services and aircraft crash rescue services as are available. The cost of such services shall be borne by the United States Government, subject to charging appropriate fees for users of these services.

G. *Landing Fees.*—At such time as the military forces permanently take over operation of West Field, commercial aircraft will be charged the minimum allowable landing fees according to the standard policy of the appropriate military department, and collection will be in accordance with the terms of the formal joint use agreement. In the interim the Government of the Northern Mariana Islands may establish and collect landing fees from all non-United States Government aircraft.

H. *Access, Security and Customs:*

(1) Access to the present and future civilian air terminal area will be unrestricted.

(2) Security in and around the present and future civilian air terminal and operation and maintenance of the civilian facilities will be the responsibility of the Government of the Northern Mariana Islands or its representative.

(3) Customs inspections of all persons, baggage and freight will be in accord with all applicable laws and implementing regulations with the general principle established that whenever and wherever possible this customs inspection shall be performed in the military area by customs inspectors arranged for by the military and in the civilian area by customs inspectors arranged for by the Government of the Northern Mariana Islands.

Part III. Social and Civil Infrastructure Arrangements

The following provisions, unless modified in writing by mutual agreement of the duly authorized representatives of the United States Government and the Government of the Northern Mariana Islands, will govern the future relations between the United States military forces in the Northern Mariana Islands and the civil authorities thereof. Coordination on these arrangements will be accomplished through a Civil-Military Advisory Council organized as soon as required after implementation of this Agreement.

1. Civilian Responsibilities

It is understood that the Government of the Northern Mariana Islands has full responsibility for planning, as well as developing, all facilities and services for the Tinian civilian community.

2. Fishing and Shoreline Activities, Tinian

All shoreline areas in and around the northern two-thirds of Tinian will remain open to fishermen at all possible times except for those limited areas that must be closed to comply with safety, security and hazardous risk requirements as may develop from either military activities or commercial activities.

3. Beaches, Tinian

Marianas citizens will have the same access to beach areas in the military areas of Tinian for recreational purposes as military personnel and their dependents. During times of military maneuvers, operations or related activity the use of certain beaches or areas of the beach will be restricted. Closure for such purposes, however, will be kept to a minimum consistent with military requirements in the interest of safety and security. Conduct of all personnel within the beach areas and use of these areas will be subject to applicable military regulations.

4. Utilities

A. Utilities planning will be undertaken for Tinian on an island-wide basis, taking into account reasonable projections of civilian population at the time development by the military becomes necessary. Planning accomplished by the United States will be closely coordinated with planning by the Government of the Northern Mariana Islands. The Government of the Northern Mariana Islands will bear the cost of civilian planning by either undertaking the planning work or reimbursing the United States for planning services.

B. The Government of the Northern Mariana Islands will take necessary action to obtain such federal funds as are available for planning pursuant to the Housing and Community Development Act of 1974 and other relevant laws.

C. When utilities are constructed for military purposes the United States Government will make excess capacity of utilities available to the civilian community on Tinian on an appropriate fee basis if desired. Use of this excess capacity by the civilian community is to be without contribution into the development costs of the capacity, and the United States Government will not be expected to create or to insure any such excess capacity for the civilian community on Tinian.

D. When utilities are constructed for military purposes, additional capacity can be added subject to full payment for the incremental costs by the Government of the Northern Mariana Islands.

5. Water

Potable water will be made available to the United States military base by the Government of the Northern Mariana Islands at a mutually agreed cost.

6. Medical Care

In accordance with applicable guidelines and regulations, emergency care in military facilities established on Tinian will be provided by the military to all residents on Tinian when available on the island. In addition medical care in military health facilities on Tinian on a non-emergency basis will be provided residents of Tinian where civilian capacity is non-existent, subject to the capacity and capability of the military and professional staff and availability of such Tinian military health facilities. Costs for all medical care will be at the prevailing reimbursement rates.

7. Fire Protection

When military firefighting facilities become necessary a mutual fire protection aid agreement similar to that type of agreement presently provided voluntarily by the military services in other locations will be entered into between the military facility on Tinian and the local community.

8. Base Exchange, Commissary and Movies

At such times as an operating base is established purchasing of commodities by the civilian community from the base exchange and commissary will be prohibited, but use of base movies by the civilian community as guests in accordance with existing regulations will be permitted.

9. Schools

Prior to the arrival of significant numbers of school age dependents of military personnel, appropriate local and federal officials will initiate such advance consultation and school development programs as necessary to secure federal assistance as may be required for an integrated local school system adequate to provide for all stages of Tinian's development. The Department of Defense will consult with and advise the appropriate officials of the Northern Mariana Islands as soon as possible regarding such programmed arrivals.

10. Assistance to the Community

The United States Government will consider sympathetically all bona fide requests from the community or its residents for materials or technical assistance, from resources on the base, in the event local resources are insufficient to meet the community needs.

11. Economic Opportunity

To the extent practicable appropriate United States military and civilian authorities or contractors executing United States Government contracts will attempt to utilize the resources and services of people of the Northern Mariana Islands in construction, development, supply and maintenance activities in the Marianas. Further, United States military and civilian authorities will, whenever practicable, provide technical and training assistance to the people of the Northern Mariana Islands in accordance with applicable United States law to assist in their achievement of necessary skills.

Part IV. Implementation

This Technical Agreement will become effective when Sections 802 and 803 of the Covenant comes into force. Subordinate formal implementing agreements are to be executed as soon as possible.

Signed at Saipan, Mariana Islands on the fifteenth day of February, 1975.

For the United States of America:

Ambassador F. HAYDN WILLIAMS,
Personal Representative of the
President of the United States.

For the People of the Northern Mariana Islands:

EDWARD DLG. PANGELINAN,
Chairman, Marianas,
Political Status Commission.
VICENTE N. SANTOS,
Vice Chairman, Marianas
Political Status Commission.

Members of the Marianas Political Status Commission: Juan LG. Cabrera, Vincente T. Camacho, Jose R. Cruz, Bernard V. Hofschneider, Benjamin T. Manglona, Daniel T. Muna, Dr. Francisco T. Palacios, Joaquin I. Pangelinan Manuel A. Sablan, Joannes R. Taimanao, and Pedro A. Tenorio.

Question. Why has the acquisition not been requested before now?

Answer. Although the covenant was signed in February 1975, it was not approved by the voters in the Northern Mariana Islands until June. The congressional resolution approving the covenant was signed in March 1976. The proclamation signed by President Carter in October 1977 stipulated that the covenant come into full force and effect on January 9, 1978. The lease must be consumated within five years of that date, or by January 1983. A shortage of military construction funds prevented budget submittal in fiscal year 1980, the earliest possible program. Rising the cost of the lease beyond that which had been anticipated forces submittal in the fiscal year 1981 program, although it would not be mandatory to fund prior to fiscal year 1983. At the present rate of inflation, the cost in fiscal year 1983 would be over $40 million, more than double the original agreed value of the lease.

Question. What "mobilization and long-range contingency plans" might prompt the need for 18,000 acres on Tinian?

Answer. No specific use can be determined until forward bases have been denied. The exact utilization would differ, depending on which bases were lost, and on priorities at that time. However, in general, the probable use of land would be for basing of Air Force bombers and a Marine amphibious training area.

Question. What happens to the land if the United States does not exercise the least option?

Answer. If the lease agreement is not completed by January 9, 1983, both parties will be released from all liabilities or obligations connected with lease provisions. During the commonwealth negotiations, the Northern Mariana Islands Government was assured that the lease would be exercised. They view it as a U.S. commitment, not an option.

DUAL PURPOSE TERMINAL, NAVAL STATION, KEFLAVIK, ICELAND

Question. Provide for the record documentation showing the 18 July 1979 cost sharing agreement.

Answer.

COST SHARING AGREEMENT

Meeting Between Representatives of the Governments of Iceland and the United States of America on Dual-Purpose Civil Air Terminal, Keflavik, Iceland 18 July 1979.

Agreed Minute

A meeting of the United States and Icelandic delegations to discuss the proposed dual-purpose air terminal to be constructed at Keflavik, Iceland, was held in Reykjavik July 18, 1979. During the course of the meeting the following were accomplished:

(1) The U.S. delegation tabled the attached engineered cost estimate dated 22 June 1979 proposed by the Architect-Engineer on the basis of the Icelandic Building Committee approved concept "C" for the dual-purpose air terminal project. Project cost estimate based on 1981 contract award was indicated as $46 million.

(2) The U.S. delegation informed the Icelandic delegation that subject to the availability of funds authorized and appropriated for construction of a dual-purpose terminal facility at Keflavik Airport, the United States agreed to provide not more than $20 million for payment of its total contribution.

(3) As regards all other costs, the Icelandic delegation gave assurances that the Government of Iceland, subject to parliamentary approval, is committed to the implementation of the project and that the funds required in excess of the aforementioned U.S. contribution necessary to construct a complete and usable terminal facility would be contributed by the Government of Iceland at the appropriate time.

(4) Various other points related to the construction and execution were discussed using as an agenda the sixteen paragraph draft document entitled, "Proposed Terms and Conditions for Cooperation in the Construction and Use of a Dual-Purpose Terminal Facility at Keflavik Airport, Iceland." Following a point-by-point reading, both sides agreed more time was needed for review of the draft's provisions. Since agreement on provisions governing contract execution must be reached prior to the U.S. Military Contract submission to Congress in January 1980, both sides agreed to work towards a prompt reconciliation of differences and to schedule the next meeting at the earliest possible date.

Navy Comment: It should be noted that the U.S. is committed by the 22 October 1974 Memorandum of Understanding (MOU) to pay *all* costs of the taxiways, apron and access road serving the new terminal. Estimated cost $25 million, scheduled for FY 1982 MILCON budget.

Question. Have you approached NATO about sharing in the cost? Will you file prefinancing statements?

Answer. Yes, with the determination made by SACLANT that NATO is unwilling and unable to fund a facility affording NATO forces no peacetime support for training and operations.

We should not loose sight of the fact that Iceland, a NATO nation, stands to pay 57 percent, at least, of the cost of this facility. The separation will benefit the NATO (U.S.) forces operating in Iceland by improving security, freeing-up apron and building space, and assuring tenure under the bilateral agreement of 1951. These forces are receiving their full-measure of NATO Infrastructure funding in ongoing SACLANT programs. Such facilities as refueling systems, air traffic control tower, corrosion control, ammunition storage, shelters and an operations building are being funded by NATO now.

Question. Do I understand correctly that the new terminal will be for the exclusive use of the GOI during peacetime and that the existing terminal (86,000 SF of substandard space) will be used by the U.S. exclusively in peacetime?

Answer. Yes, that understanding is correct. By using the new terminal for all peacetime civilian operations, the separation of military and civilian operations envisaged in the 22 October 1974 MOU will be realized. The present terminal, located in the midst of the military operations area, will be vacated by the civilian aviation organizations and turned over to the U.S. military Defense Force for use.

GEOTHERMAL HEATING, NAVAL STATION, KEFLAVIK, ICELAND

Question. Discuss the economics of this project. Will the U.S. pay an annual "user fee"?

Answer. We recalculated the economic analysis in September 1979, using a projected cost of 83 cents per gallon for heating fuel as of 1 October 1981, the date on which we begin using geothermal heat. This was up from the 67 cents per gallon we used in an earlier analysis. The payback on the capital investment of $36.2 million came out to be just under eight years. Forecasts as high as 129 cents per gallon for 1981 have recently been published by the Department of Defense. We can thus expect a payback even earlier than the eight years.

The United States will pay an annual "user fee", negotiated in advance for the first ten years of operation. In determining the previously noted pay-back period, these annual payments were duly considered under operating costs.

Question. How was the "connection charge" computed?

Answer. The connection charge covers our share of capital costs for geothermal wells, power plant and cross-country distribution pipeline to the base boundary. Total heating load on the system is 110 megawatts, including the Naval Station and seven surrounding towns. The Naval Station load is 54 megawatts, hence the split is right at 50%, and capital costs are shared on that basis. In addition, the connection charge covers the entire cost of the on-base geothermal heating distribution lines, which are to be constructed by the heating corporation.

Question. Provide for the record the documentation showing the U.S. "commitment to Iceland to join in using geothermal heating".

Answer. The following is an extract from the Memorandum of Understanding dated 22 October 1974 between the Government of the United States and the Government of Iceland.

"Regarding the continuation of the facilities and their utilization by the Iceland Defense Force in accordance with the Defense Agreement of May 5, 1951, the Governments of the United States and Iceland have reached the following understandings:

AGREED MINUTE

The following Agreed Minute was adopted during discussions between the United States Government and the Government of Iceland pursuant to Article VII of the 1951 Defense Agreement between the two countries:

D. The United States Government agrees to study the feasibility of purchasing geothermal heat for use by the Iceland Defense Force in the event such service is made available by the Government of Iceland in the Reykjanes Peninsula area."

NAVAL SUPPORT FACILITY, DIEGO GARCIA, INDIAN OCEAN

Question. Can this work and that planned for the next few years be done under the terms of the existing U.S.-U.K. agreement? (Provide for the record the pertinent portions of that agreement to support your response.)

Answer. By an exchange of diplomatic notes in 1966, the United Kingdom made islands in the Indian Ocean available for U.S. military use. Another exchange of notes in 1972 supplemented the 1966 accord to provide for a communication station on Diego Garcia. In 1976, by another exchange of diplomatic notes, the 1972 agreement was supplanted to permit expansion of the communication station into a Naval Support Facility. The 1976 agreement allows the U.S. to build permanent improvements after consultation with the U.K. Applicable portions of the 1976 note are provided for the record.

FOREIGN AND COMMONWEALTH OFFICE, LONDON,
February 25, 1976.

Note No. DPP 063/530/2

SIR: I have the honour to refer to the Agreement constituted by the Exchange of Notes dated 30 December 1966 between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the United States of America concerning the availability of the British Indian Ocean Territory for defense purposes and to the Agreement constituted by the Exchange of Notes dated 24 October 1972 between the two Governments concerning a limited United States naval communications facility on Diego Garcia, British Indian Ocean Territory. Pursuant to paragraph 2(b) of the former Agreement, I now convey the approval in principle of the Government of the United Kingdom to the development of the present limited naval communications facility on Diego Garcia into a support facility of the United States Navy and propose an Agreement in the following terms:

(1) Scope of the facility

(a) Subject to the following provisions of this Agreement, the Government of the United States shall have the right to develop the present limited naval communications facility on Diego Garcia as a support facility of the United States Navy and to maintain and operate it. The facility shall consist of an anchorage, airfield, support and supply elements and ancillary services, personnel accommodation, and transmitting and receiving services. Immovable structures, installations and buildings for the facility may, after consultation with the appropriate administrative authorities of the United Kingdom, be constructed within the specific area shown in the plan attached to this Note. The specific area may be altered from time to time as may be agreed by the appropriate administrative authorities of the two Governments.

(b) During the term of the Agreement the Government of the United States may conduct on Diego Garcia such functions as are necessary for the development, use, maintenance, operation and security of the facility. In the exercise of these functions the Government of the United States, members of the United States Forces and contractor personnel shall have freedom of access to that part of Diego Garcia outside the specific area referred to in sub-paragraph (a), but the Government of the United States may erect or construct immovable structures, installations and buildings outside the specific area only with the prior agreement of the appropriate administrative authorities of the Government of the United Kingdom.

(c) Delimitation of the specific area shall, subject to the provisions of the BIOT Agreement and after consultation with the appropriate United States authorities with a view to avoiding interference with the existing use of the facility, in no way restrict the Government of the United Kingdom from constructing and operating at their own expense their own defense facilities within that area, or from using that part of Diego Garcia outside the specific area.

Question. Have you consulted with the U.K. on this proposed expansion?

Answer. In accordance with the terms of the 1976 note, consultation with the British is being undertaken by the State Department.

Question. What expanded capability are you seeking for Diego Garcia?

Answer. The projects requested will provide the additional shore facilities needed to support the increased tempo of naval operations in the Indian Ocean area. The present island facilities were not planned for and are not capable of supporting the level of operations now occurring in the area.

(Water Pit Facility project, Puget Sound Naval Shipyard, Washington)
a. Include a description of the use of the facility.
b. Why is it needed?
c. Discuss environmental aspects.

Department of the Navy,
Naval Sea Systems Command,
Washington, D.C., May 27, 1980.

Hon. Henry M. Jackson,
U.S. Senate, Washington, D.C.

Dear Senator Jackson: You recently asked me to provide information you could use in responding to questions regarding the Water Pit Facility project which is in the Navy's Fiscal Year 1981 Military Construction Program and planned for installation at the Puget Sound Naval Shipyard. The information in this letter includes a description of the use of the facility, why it is needed, the environmental aspects, and a discussion of some if the concerns that I am aware have been raised.

The water pit project will provide a dockside facility to accomplish disassembly, inspection and interim handling of spent fuel and reactor components during the refueling of nuclear powered ships. To date the Puget Sound Naval Shipyard has refueled nuclear-powered submarines and nuclear-powered cruisers utilizing existing facilities. While these facilities have been adequate for these types of ships, they are not adequate for refueling nuclear-powered aircraft carriers. The Water Pit Facility is needed to give the shipyard the capability to refuel nuclear-powered aircraft carriers and, once in operation, it will also facilitate refuelings of nuclear-powered submarines and cruisers.

The USS *Enterprise* is presently assigned to the Pacific fleet and the Navy plans on homeporting other nuclear-powered aircraft carriers on the West Coast for military and strategic reasons. Without a West Coast refueling site, the Navy would have to accept the reduction in operational flexibility and on-station time resulting from bringing Pacific fleet carriers to the East Coast for refueling. Without a second refueling site, the Navy would be forced to assume that the private shipyard at Newport News, Virginia will be available to perform refuelings on all nuclear-powered carriers. You are aware of the difficult problems we have sometimes had in getting this shipyard to perform Navy work. Relying on a single refueling site also would force the Navy to operate without the ability to service the reactors in more than one carrier at a time, which could be necessitated by unplanned changes in operational tempo or unforeseen technical difficulties. With three nuclear-powered aircraft carriers in operation and two more under construction or authorized it would be foolhardy not to have adequate facilities to service these vital ships.

Since Puget Sound is the only naval shipyard on the West Coast with the drydock capacity to overhaul aircraft carriers, it is the only logical choice for locating the Water Pit Facility. We are on a relatively tight schedule, as construction of the water pit needs to begin in 1981 in order to be ready to support a possible aircraft carrier or cruiser refueling as early as mid-1984. The Water Pit Facility will also provide the Puget Sound Naval Shipyard with improved flexibility is conducting other refueling work and with the capability to refuel Trident submarines. Since Trident submarines are to be homeported at Bangor, Washington, they will already be in close proximity to the Puget Sound Shipyard when they require refueling beginning in the 1990's.

With regard to concerns that have been raised about the facility, there have been a number of inaccuracies reported in the news media. This has been the source of most of the interest, with over 125 media questions having been answered to date. There have, however, only been eight inquiries from private individuals or groups. One concern that has been expressed is with regard to the safety and environmental impact of this facility. The safety and environmental performance in the Naval Nuclear Propulsion Program is an area with which you are fully familiar from your many years on the Joint Committee on Atomic Energy and on the Armed Services and Energy and Natural Resources Committees. I have testified before you on many occasions regarding our efforts in the Naval Nuclear Propulsion Program and you have seen nuclear work performed first hand at the Puget Sound shipyard.

From the beginning of my association with nuclear power, 35 years ago, I have always insisted on strict standards of safety and environmental protection. The more than 150 reactors for which I am responsible have amassed over 1900 years of reactor operation. In that time there has never been a reactor accident nor has there been a release of any radioactivity which has had a significant effect on the environment or in any way affected the health and safety of the public. I intend to continue to do whatever is necessary to keep this record intact.

I have made it a matter of strict policy to reduce to the minimum practicable the amounts of radioactivity released into harbors. The procedures to accomplish this have been reviewed with the U.S. Department of Energy, the U.S. Nuclear Regulatory Commission ond the U.S. Environmental Protection Agency, and I ensure these procedures are followed. As a result, the total gamma radioactivity released within twelve miles from shore from the more than 100 U.S. naval nuclear-powered ships and from nine shipyards, including Puget Sound Naval Shipyard, fourteen submarine tenders and three submarine bases has been less than 0.002 curie in each of the last nine years. This is the total from all operations involving the propulsion plants, including operations, maintenance, overhaul, and refueling. This is far too small to have any measurable effect on the environment. As a measure of the significance of these data, if one person were able to drink the entire amount of radioactivity discharged into any harbor in any of the last nine years, he would not exceed the annual radiation exposure permitted for an individual worker by the U.S. Nuclear Regulatory Commission.

The total amount of gamma radioactivity that has been released to the harbor at Puget Sound Naval Shipyard since refueling and overhaul operations began in 1955 has been approximately 0.01 curie. This is predominantly cobalt 60, which has a five-year half life. This is the total release resulting from shipyard operations including refueling of twenty-two naval nuclear reactors as well as the operations of the ships themselves. This amount of radioactivity is too small to have had any significant effect on the environment. For comparison and as a measure of the significance of this data, the amount of naturally occurring radioactivity in the entire Puget Sound harbor is approximately 40,000 curies. This is predominantly potassium 40, which has a half life of approximately one billion years. This natural radioactivity is approximately four hundred million times the total cobalt 60 released from the shipyard. I offer this simple comparison to help show the insignificance of shipyard releases of radioactivity.

To provide additional assurance that procedures we use to control radioactivity are adequate to protect the environment, the Navy conducts environmental monitoring in harbors such as around Puget Sound Naval Shipyard. Samples from each harbor monitored are also checked at least annually by a U.S. Department of Energy laboratory to ensure analytical procedures are correct and standardized. The Department of Energy laboratory results have been consistent with shipyard results.

The U.S. Environmental Protection Agency (EPA) conducts detailed reviews of our procedures for controlling radioactive waste and for radiological environmental monitoring. An EPA laboratory has conducted detailed environmental surveys of selected U.S. harbors including the harbor at Puget Sound Naval Shipyard. The EPA report of this survey was issued in February 1977 and concluded that the procedures the Navy uses to control radioactivity are effective, that nuclear operations are not contributing a significant radiation exposure to the public, and that the continuation of current practices and the monitoring program should assure continued absence of significant public exposure.

To provide the public with information on the action taken to protect the environment, Navy reports have been published describing the handling and disposal of radioactive material from the Naval Nuclear Propulsion Program. Since 1966, reports have been issued annually on the environmental monitoring and disposal of radioactive wastes from U.S. naval nuclear-powered ships and support facilities. You have seen previous versions of this report which have been included in the congressional hearing records of my testimony. I have enclosed a copy of the most recent report for 1979, NT-80-1, which confirms the absence of radiological impact on the environment resulting from Naval nuclear-powered ship activities.

Planning for the Water Pit Facility began in 1974. In conjunction with planning for this facility, and in conformance with Navy procedures for implementing the National Environmental Policy Act, an Environmental Impact Assessment for the Water Pit Facility was prepared. A copy of the Assessment is enclosed for your information as is the latest issue of a Puget Sound Naval Shipyard environmental report which forms, along with the previously mentioned Navy environmental reports, a specific part of the Water Pit Facility Environmental Impact Assessment.

Some contend that instead of the Assessment, the Navy should prepare a more extensive Environmental Impact Statement. An Environmental Impact Statement is not required for this project and to prepare one would only result in delay and added cost. The water pit is not a new concept and there are no technological unknowns or uncertainties associated with how it will operate. The procedures, training, design and safety considerations being used for the Water Pit Facility are the same as those proven successful in the more than 160 refuelings performed to date by the Naval Nuclear Propulsion Program. The excellent environmental control record of the Naval Nuclear Propulsion Program results from know-how strict control and long, hard, dedicated work by people who are knowledgeable in all aspects of the job, both technical and environmental. The same technical personnel who have been responsible for the safe operation of naval reactors and their support facilities are the ones who are responsible for the design and safety of the Water Pit Facility. With over 25 years of experience in handling nuclear work in an environmentally sound manner, the full technical expertise of the Naval Nuclear Propulsion Program backs up the conclusion in the Assessment that the Water Pit Facility will not cause any significant environmental impact. This should carry more weight and engender greater public confidence than spending the funds and diverting the manpower to create voluminous documents.

At the request of the Seattle office of the Environmental Protection Agency, my office reviewed with them and the State of Washington's Radiological Health Office the Water Pit Facility project, the Navy's Environmental Impact Assessment for this project, and the environmental aspects of the Naval Nuclear Propulsion Program. As a result of this review, EPA wrote the Commander of the Puget Sound Naval Shipyard a letter dated March 14, 1980, and advised that they consider the Water Pit Facility Environmental Impact Assessment is "technically adequate and we concur with the shipyard's finding that the proposed project will not have significant environmental consequences." A copy of this letter is enclosed.

In opposing the Water Pit Facility, some have pointed to radiological incidents experienced at the Puget Sound Naval Shipyard as evidence the yard is "unsafe" and thus should not be allowed to operate the water pit. The fact that these incidents are formally documented and reported to me is evidence of the strict standards of radiological control applied in my program. I require any deficiency, no matter how minor, to be reported. I personally see each and every one of these reports, whether from the ships or the shipyards, and ensure that appropriate corrective action is taken if necessary. That requires a lot of my time and time of other senior pople but it is an effective way to be sure that little problems do not become big ones. By way of comparison, none of the radiological incidents at the Puget Sound Naval Shipyard would require reporting by the Nuclear Regulatory Commission or the Department of Energy. In other words, in other programs, the incidents being referred to at Puget Sound would simply not be considered as deserving of being reported.

If I were running this program for public relations purposes, rather than focusing on technical and safety aspects, I would eliminate these reports so that they could not be cited as "incidents." But that would be contrary to my objective—to ensure all involved carry out their work as safely as possible. Those who use this information out of context do a great disservice to the public and the shipyard employees. They are undercutting the very kinds of actions which I believe are essential in carrying out a complex technical effort in a safe and responsible way.

Questions concerning the handling of spent fuel have also been raised. Spent fuel from the Puget Sound Naval Shipyard is turned over to the Department of Energy, which transports the fuel by rail to Department of Energy facilities in Idaho. This is what has been done with spent fuel in the past and what will be done in the future, with or without the addition of the Water Pit Facility. The shipyard will not retain spent naval fuel other than temporarily in conjunction with the refueling work in the shipyard. The Water Pit Facility will not be used for the long-term storage of spent naval fuel and it will not be used for fuel other than that being removed from ships being serviced at Puget Sound.

Naval spent fuel shipments have been and will continue to be made infrequently from the Puget Sound Naval Shipyard since the development of long-life cores has resulted in a sharp reduction in the frequency with which our nuclear-powered ships need to be refueled. Spent fuel shipments are carefully safeguarded. They are escorted by Government representatives and each shipping container is specifically designed to meet applicable Federal regulations for shipping to withstand extreme accident impacts, fire, and water immersion, and to prevent release of the material to the environment in the event of an accident. The cargo is non-explosive and non-flammable and contains radioactive material in insoluble form that should not be dispersed even in the event of an accident. As confirmation that the measures in effect are adequate, there has never been a shipping accident in the over 20 years of transporting naval spent fuel from all shipyard locations on both coasts. The construction of the Water Pit Facility will not alter the transportation arrangements and practices currently followed.

Some have questioned whether shipyard security is adequate to protect nuclear fuel. The Puget Sound Naval Shipyard employs a range of security measures to protect material and classified information. The specific measures range from guarded access control into the industrial area, to a number of more restrictive measures that provide a high degree of security for such items as nuclear fuel. In the case of the Water Pit Facility, additional security features are included in the design that will make unauthorized entry extremely difficult. In addition to specific security design features and equipment, special security practices and procedures will be in effect, such as availability of an armed quick-reaction force to deal with any outside attempt to enter the area. As a result of security measures in effect, there have been no incidents which resulted in loss of security protection for naval nuclear fuel in the over 15 years that the Puget Sound Naval Shipyard has been engaged in work on nuclear-powered ships.

I trust this letter and the enclosures provide you with the information you need on the Water Pit Facility. Its construction represents a commitment by the Navy to give the Puget Sound Naval Shipyard the most modern capability to service our growing nuclear-powered fleet. The 125 nuclear-powered ships currently in operation represent over 40 percent of our major combatants and are among the Navy's most capable ships. The nuclear-powered ballistic missile submarines, including the Trident submarines under construction, will provide the United States with the most secure strategic deterrence for the foreseeable future. The nuclear-powered carrier *Nimitz* is today operating with other nuclear-powered ships as a battle group in the Indian Ocean. This gives us one of the most flexible and powerful means of projecting military strength to any part of the world where it is needed. Considering the vital role these ships will continue to play in our national defense, it is essential that the support activities have the capability to keep them operating. The Water Pit Facility is an important factor in this future support structure. The addition of this facility also enhances the shipyard's prospects for future work. Thus, the project will benefit the Bremerton area just as it benefits our overall defense effort .

From the information I have provided, I believe it is also clear that the project will be carried out in a manner that will fully protect the environment and the public. Indeed, you may be assured that if anything develops indicating an environmental or safety problem, I will be the first to stop the project until the problem is satisfactorily resolved.

I appreciate the opportunity to provide you with information on the Water Pit Facility. Should you have further questions please do not hesitate to contact me.

Respectfully,

H. G. RICKOVER.

Encl: NT-80-1, Project No. P-204 Environmental Impact Assessment. Puget Sound Naval Shipyard Environmental Radioactivity and Population Dose Assessment.

QUESTIONS SUBMITTED BY SENATOR GARY HART, ANSWERS SUPPLIED BY MAJ. GEN. WILLIAM GILBERT DEPARTMENT OF THE AIR FORCE

GENERAL

Question. For fiscal years 1978, 1979 and 1980, provide a project listing showing:

a. Amount authorized

b. Current Working Estimate

c. Project status (completed and closed out, completed and being closed out, under construction, under design, delayed, deferred, cancelled)

(1) for projects under construction, indicate the estimated completion date

(2) for projects under design indicate the estimated date of construction award

(3) for projects delayed, deferred or cancelled, indicate the reason

Answer: The requested information on the execution of the Military Construction Program follows:

MILCON PROJECT STATUS REPORT, AIR FORCE

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
FISCAL YEAR 1980												
AAC												
Elmendorf AFB:												
ADAL Fire Station	$1,300	$1,300	Nov. 78	Dec. 79	Feb. 80	Feb. 80	$1,265.0	2	Feb. 81			
Alter UEPH	3,500	3,500	Oct. 78	Dec. 79	Mar. 80	Mar. 80	3,204.0	2	May 81			
ADAL Regional Operations Control Ctr	8,600	8,600	Dec. 78	Apr. 80	May 80				Aug. 81			
CMD (AAC) total	13,400	13,400										
ADC												
Thule: ADAL Tech Site Fac (total)	3,150	3,150	Nov. 78	Sept. 79	Dec. 79	Jan. 80	2,748.0	2	Dec. 80			
USAFE												
Germany:												
Hahn AFB:												
Flight Sim Fac	3,450	3,450	Sept. 79	May 80	(1)							
Var Acft Maint Fac	1,800	1,800	Feb. 79	July 80	(1)							
Total	5,250	5,250										
Ramstein AFB:												
UEPH	800	800	Sept. 79	Mar. 80	(1)							
ADAL Chapel	930	930	Nov. 78	Mar. 80	(1)							
Spt Equip Shop	510	510	Jan. 77	Dec. 78	(1)							
Total	2,240	2,240										
Sembach AFB:												
Arm/Disarm Pads	1,000	1,000	July 79	Aug. 80	(1)							
Combat Opr Ctr	5,500	5,500	Jan. 77	Jan. 80	June 80				Feb. 83			
Total	6,500	6,500										
Germany total	13,990	13,990										

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
United Kingdom:												
Alconbury:												
ADAL UEPH	750	750	Jan. 78	Dec. 79	Apr. 80				Oct. 81		RD.	
Sec Police Ops	700	700	Oct. 78	Dec. 79	(1)							
Total	1,450	1,450										
Bentwaters:												
Arm/Disarm Pad	1,200	1,200	Dec. 78	July 79	Dec. 79	Feb. 80	1,101.0		Dec. 80			
Flt Simulator	3,100	3,100	June 78	Mar. 80	(1)							
Total	4,300	4,300										
Lakenheath RAF:												
Alter UEPH	900	900	Apr. 78	July 79	Apr. 80				Oct. 81			
Flt Sim Trng	770	770	Aug. 77	June 79	Apr. 80				Apr. 81			
Total	1,670	1,670										
Mildenhall RAF: Addn to Fire Sta (total)	1,000	1,000	Dec. 78	Jan. 80	Apr. 80				Aug. 81			
Upper Heyford RAF: Alter UEPH (total)	1,800	1,800	Apr. 78	July 79	(1)							
Woodbridge RAF:												
Acft Spt Fac	3,300	3,300	Oct. 78	Dec. 79	Apr. 80				June 81			
Dining Hall	1,400	1,400	Jan. 79	June 80	(1)							
Total	4,700	4,700										
United Kingdom total	14,920	14,920										

USAFE Various Loc:									
Aviano: Alt UEPH	700	700	Feb 79	Nov. 79	Nov. 79		Feb. 81		
Iraklion: Alt UEPH	1,500								Auth/Not approp.
Roberts Apt: Var Opr Fac	4,950	4,950	Mar. 79	June 80	(1)				
Torrejon AFB: Add to Fire Sta	540	540	Dec. 78	Jan. 80	Apr. 80		Apr. 81		
Zaragoza AFB: Add to Fire Sta	580	580	Aug. 78	Jan. 79	Apr. 80		Apr. 81		
USAFE Var Loc total	8,270	6,770							
Various Locations:									
Collocated Ops Base Essential Fac	3,600	3,600	Oct. 79	July 80	(1)				
Power Check Pads	1,050	1,050	Jan. 80	May 80	(3)				
Var Loc total	4,650	4,650							
USAFE total	41,830	40,330							
ATC									
Keesler AFB: ECIP (total)	840	840	Mar. 79	Nov. 79	Apr. 80		Jan. 81		
Lackland AFB:									
ECIP	1,000	1,000	Feb. 79	Jan. 80	(1)				
UEPH	4,400	4,400	Jan. 79	Jan. 80	June 80		Feb. 81		
Total	6,400	5,400							
Laughlin AFB:									
Dining Hall	1,300	1,300	June 78	June 80	Aug. 80		Sept. 81		
UEPH	3,200	3,200	Dec. 78	June 80	(1)				
Total	4,500	4,500							
Mather AFB: ECIP (total)	1,650	1,650	May 78	Mar. 80	(1)				
Maxwell AFB:									
ADAL Academic Clsrm	2,550	2,550	Aug. 79	July 80	(1)				
Visiting Officer's Quarters	4,050	4,050	July 79	Apr. 80	(1)				
Total	6,600	6,600							
Sheppard AFB:									
ECIP	1,400	1,400	Mar. 79	Feb. 80	Nov. 80		Nov. 81		
RAPCON	650	650	Nov. 78	Feb. 80	(1)				
Total	2,050	2,050							

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
Vance AFB: Runway Lighting (total)	1,500	1,500	Oct. 78	Jan. 80	Apr. 80				Aug. 81			
ATC total	22,540	22,540										
LOG												
Hill AFB:												
Acft Maint and Ops Fac	3,000	3,000	Oct. 78	Oct. 79	Mar. 80	Mar. 80	2,938.0		May 82			
ECIP	3,250	3,250	Mar. 79	June 80	Oct. 80				Apr. 82			
Total	6,250	6,250										
Hill Range: ADAL UEPH (total)	740	740	Nov. 78	Dec. 79	Apr. 80				June 81			
Kelly AFB:												
Alt Elec Dist Sys	3,100	3,100	Feb. 79	Apr. 80	(1)							
ECIP	650	650	Apr. 79	Feb. 80	Apr. 80				Jan. 81			
Vault Addn Crypto Depot	2,600	2,600	Dec. 78	Dec. 79	May 80				June 81			
Total	6,350	6,350										
Newark AFS: ECIP-EMCS (total)	860	860	Sept. 78	Feb. 80	(1)							
Robins AFB:												
ECIP	1,450	1,450	Feb. 79	Oct. 79	Jan. 80	Jan. 80	1,251.0		May 81			
Personnel Serv Cntr	3,500											
Addn to Wpns Sys Comp	5,786	5,786	Apr. 79	May 80	(1)							Do.
Total	10,736	7,236										
Tinker AFB:												
ADL Log Air Frst Proc Fac	4,500	4,500	Feb. 79	Nov. 79	Feb. 80	Feb. 80	5,167.0	1	Jan. 82			
Indust Waste Trmt/Disp	7,600	7,600	May 79	Oct. 81	(3)				Apr. 84			
ECIP	3,500	3,500	Sept. 79	Apr. 80	(1)							
Total	15,600	15,600										

Wright-Patt AFB:											
ADAL UEPH	2,300	2,300	July 79	Dec. 80	(1)						
ECIP	1,300										
Flt Contl Develop Lab	9,800	9,800	Apr. 78	May 80	(1)						Do.
ADAL Foreign Tech Photo Process Lab	2,100	2,100	Aug. 78	Jan. 80	(1)				Nov. 82		
Total	15,500	14,200									
LOG total	56,036	51,236									
MAC											
Andrews AFB: ECIP-IN/AL Stru Ext EMCS (total)	1,190	1,190	May 79	Feb. 80	(1)						
Kirtland AFB:											
Flt Simulator	1,500	1,500	Sept. 78	Nov. 79	Feb. 80	Feb. 80	1,493.0	2	Mar. 81		
ECIP	700				(1)						
Total	2,200	1,500									
Little Rock AFB:											
ADAL Fire Station	510	510	Jan. 79	Feb. 80	(1)						
Alt Reg Waste Trmt	2,400										Do. Do.
Total	2,910	510									
McChord AFB:											
Alter ROCC	3,200	3,200	Dec. 78	Feb. 80	May 80				May 81		
ECIP-INSU/ALT MECH/STRUC	900	900	Feb. 79	Feb. 80	(1)						
Total	4,100	4,100									
Pope AFB: Hydrant Fueling Sys (total)	5,400										Do.
Richards-Gebaur: Connect to Reg Sewer (total)	1,100	1,100			(1)						
Scott AFB:											
Data Processing Fac	5,400	5,400	Apr. 79	Dec. 79	(1)						
ECIP	3,900	3,900	Mar. 79	Dec. 79	Feb. 80	Mar. 80	3,773.0	2	Feb. 81		
PME Lab	760	760	Nov. 78	Dec. 79	Apr. 80	Mar. 80	759.0		Feb. 81		
Total	10,060	10,060									
Travis AFB: Alter UEPH (total)	6,300	6,300	June 78	Jan. 80	(1)						
MAC total	33,260	24,760									

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
PAF												
Kadena AB: Squad Flt Ops (total)	1,100	1,100	Jan. 78	Sept. 79	Dec. 79	Jan. 80	61.0	10	Feb. 81			
Kunsan AB:												
Alt Acft Shelters	510	510	Nov. 78	Nov. 79	May 80							
Add to and Upgrade Taxiways	3,500	3,500	Nov. 78	Nov. 79[1]	(1)				Jan. 81			
Total	4,010	4,010										
Osan AB:												
Acft Shelters	12,000	12,000	Nov. 78	May 80	(1)							
Arm/Disarm Pad	1,350	1,350	Oct. 78	Dec. 79	(1)							
Flt Simulator Fac	730	730	Nov. 78	Oct. 79	(1)							
Quick Turn Fac	6,000	6,000	May 78	Mar. 80	July 80				Sept 81			
Total	20,080	20,080										
TAEGU: UEPH (total)	510	510	Nov. 78	June 80	(1)							
PAF total	25,700	25,700										
SAC												
Castle AFB:												
Alter UEPH	3,850	3,850	June 78	Dec. 79	(1)							
Gymnasium	1,450	1,450	Aug. 76	Dec. 59	Apr. 80				Dec. 81			
Total	5,300	5,300										

Ellsworth AFB:										
ADAL CMF	11,800	11,800	Dec. 79	Jan. 80	(1)					
Upgrade Airfield Pavement	2,500	2,550	Oct. 78	Apr. 80	(1)					
Sewage Trmt and Disp Sys	2,650	2,650	May 78	Apr. 80	NA				NA	To be reg connection charge in fiscal year 1982. Reprogramed for cost overruns.
Total	17,000	17,000								
Grand Forks AFB: Alter UEPH (total)	4,900	4,900	July 78	Oct. 79	Mar. 80	Mar. 80	3,456.0	2	Oct. 81	
Griffiss AFB:										
Flight Simulator	1,850	1,850	Jan. 79	Nov. 79	Mar. 80	Mar. 80	1,950.0	2	June 81	
Regional Operations Control Center	5,300	5,300	Dec. 78	Dec. 79	Aug. 80				Aug. 82	
ECIP	930	930	Feb. 79	Sept. 79	(1)					
Total	8,080	8,080								
Grissom AFB: Upgrade Airfield Pavements (total)	4,700	4,700	Mar. 78	Feb. 80	(1)					
K. I. Sawyer AFB: Alter UEPH (total)	5,200	5,200	July 78	Oct. 79	Feb. 80	Feb. 80	3,889.0	2	Sept. 81	
March AFB:										
Regional Operating Control Ctr	5,900	5,900	Jan. 79	Dec. 79	Mar. 80	Mar. 80	3,873.0	2	Apr. 82	
Land Fee Purchase	700	700								
Total	6,600	6,600								Land purchase, no design.
Minot AFB: Alter UEPH (total)	5,100	5,100	July 78	Nov. 79	Mar. 80	Mar. 80	4,061.0	2	Oct. 81	
Offut AFB: ADAL Com Transmitter/RCVR Fac (total).	2,100	2,100	Jan. 79	Jan. 80	Apr. 80				Apr. 81	
Vandenberg AFB:										
MX Test Fac-Phase I	57,000	57,000	May 79	Mar. 80	May 80					
Lau Pad Thr Aug	13,500	13,500	Dec. 77	Sept. 79	Apr. 80				Mar. 82	
Orbiter Progressing Fac	43,000	43,000	Oct. 78	Mar. 80	June 80				Oct. 81	
Solid Rocket Booster Fac	3,200	3,200	Apr. 78	Aug. 79	Feb. 80	Feb. 80	2,594.0	3	Jan. 81	
Support Fac	6,100	6,100	Nov. 78	Nov. 79	June 80				Feb. 81	
Total	122,800	122,800								
Various Locations: Air Launched Cruise Missile (total).	14,200	14,200	May 79	Jan. 80	Apr. 80				Mar. 81	
SAC total	195,890	195,980								

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
SFO												
Space Track Obsv:												
GEODSS-White Sands	2,100	2,100	Feb. 79	Sept. 79	Jan. 80	Jan. 80	1,445.0	15	Nov. 80			
Alt GEODSS-Maui	3,650	3,650	Mar. 79	Dec. 79	Apr. 80				Aug. 81			
Total	5,750	5,750										
Special Opns Fac:												
Special Opns Fac	2,800	2,800		June 80	(1)							
Do	2,350	2,350	June 79	Mar. 80	June 80				June 81			
Total	5,150	5,150										
SFO total	10,900	10,900										
SYS												
Arnold EDC:												
Alt MX Rocket Misl Test Fac	5,400	5,400	Oct. 78	Oct. 78	Apr. 80				Mar. 81			
Electromagnetic Pulse Fac	1,000											Auth/not approp.
Total	6,400	5,400										
Eglin AFB: Alter UEPH (total)	4,100	4,100	Oct. 78	Dec. 79	Apr. 80	Apr. 80	4,436.0		Apr. 82			
Eglin AUX 9: Alter UEPH (total)	1,000	1,000	Nov. 78	Jan. 80	(1)							
Hanscom AFB: SYS Mgmt Eng Fac (total)	8,600	8,600	Sept. 78	Nov. 79	Apr. 80				Apr. 82			
Mahe Track Sta: Sat Comm Grnd Terminal (total).	550	550	Oct. 78	Jan. 80	Apr. 80				Sept. 81			
Johnson Space Ctr: STS Mission Ops Fac (total)	12,400	8,900	Mar. 79	Jan. 80	May 80				Apr. 81			Auth at $12,400. Appr at $8,900.
SYS total	33,050	28,550										

TAC										
Bergstrom AFB:										
Acft Maint and Support Fac	970	970	July 79	Feb. 80	(1)					
ADAL Avionics Maint Shops	1,050	1,050	June 79	Feb. 80	(1)					
Flt Simulator Fac	1,650	1,650	June 79	Mar. 80	(1)					
Small Acft Maint Dock	3,300	3,300	July 79	Mar. 80	(1)					
Sqd Flt Ops Fac	880	880	May 79	Jan. 80	(1)					
Total	7,850	7,850								
Cannon AFB:										
Munitions Maint and Storage Fac	1,050	1,050	May 79	Jan. 80	Apr. 80				Apr. 81	
Alt Acft Maint Fac	1,000	1,000	Apr. 79	Feb. 80	Apr. 80				Apr. 81	
Alter UEPH	1,600	1,600	Sept. 78	Jan. 80	Apr. 80				Oct. 81	
Flt Simulator Fac	2,100	2,100	Jan. 79	Oct. 79	Apr. 80				May 82	
Total	5,750	5,750								
Davis-Monthan:										
ADAL Dining Hall	1,200	1,200	Jan. 77	Mar. 80	June 80				Sept. 81	
Pave Roads	690	690	Sept. 78	July 79	(1)					
ECIP-EMCS	1,800	1,800	May 78	Feb. 80	(1)					
Addn Flt Simulator	1,850	1,850	Feb. 79	Sept. 79	Jan. 80	Jan. 80	1,740.	10	Feb. 81	
Total	5,550	5,540								
England AFB:										
Acft Maint Control Fac	850	850	June 78	Mar. 79	(1)					
Acft Mun Loading/Stor Fac	1,200	1,200	Feb. 79	Nov. 79	Feb. 80	Feb. 80	1,171.0	5	Sept. 80	
ADAL Electronic Countermeasure Complex	740	740	Jan. 79	Oct. 79	Jan. 80	Jan. 80	546.0	5	Sept. 80	
Flt Ops/Trng Fac	2,400	2,400	Feb. 79	Nov. 79	Feb. 80	Feb. 80	2,640.0	5	May 81	
Var Acft Maint Fac	1,200	1,200	June 79	Feb. 80	(1)					
Total	6,390	6,390								
George AFB:										
ADAL CMF/DC	16,500	16,500	Sept. 77	Sept. 80	(1)					
ALT Acft Fuel Sys Maint Fac	800	800	Nov. 78	July 79	Feb. 80	Feb. 80	739.0	5	Apr. 81	
ECIP	1,050	1,050	May 78	Feb. 80	(1)					
Total	18,350	18,350								
Holloman AFB:										
Alter UEPH	2,000	2,000	July 78	Oct. 79	Feb. 80	Feb. 80	1,431.0	5	Feb. 81	
ECIP	600									
Total	2,600	2,000								Auth/not approp.

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design: Start	Design: Completed	Award estimated Mar. 31, 1980	Construction: Contract award	Construction: Award CWE	Construction: Status Mar. 31, 1980	Beneficial occupancy: Estimated	Beneficial occupancy: Actual	Total project expenditure when completed	Remarks
Homestead AFB:												
Flt Simulator Fac	2,200	2,200	Mar. 79	Nov. 79	Jan. 80				June 81			
Supply Ctr for Maint Support	520	520	Feb. 79	Sept. 79	Apr. 80				Mar. 81			
Connect to County Sewer Sys	4,050	4,050	Apr. 78	Sept. 79	Apr. 80				Oct. 80			
Var Acft Maint Fac	1,600	1,600	Feb. 79	Feb. 80	Apr. 80				June 81			
ECIP	1,500											
Total	9,870	8,370										Do.
Langley AFB: ECIP (total)	2,500											Do.
MacDill AFB:												
Acft Fuel Sys Maint Fac	1,450	1,450	Oct. 75	Aug. 78	(1)							
Acft Maint and Trng	900	900	Aug. 79	Dec. 79	Feb. 80	Feb. 80	429.0	5	May 81			Phase I awarded.
Total	2,350	2,350										
Moody AFB:												
Adn to Acft Aper Parking Apron	840	840	Mar. 77	Apr. 79	Jan. 80	Jan. 80	818.0	5	Oct. 80			
ECIP	1,150	1,150	Aug. 78	Oct. 79	Jan. 80	Jan. 80	1,142.0	5	Oct. 80			
Small Acft Maint Fac	2,150	2,150	Jan. 77	Apr. 80	(1)							
Total	4,140	4,140										
Myrtle Beach AFB: ADAL Fuel Sys Maint Fac (total)	970	970	Jan. 79	Feb. 80	(1)							
Nellis AFB:												
ADAL Var Acft Maint Facs	890	890	Mar. 79	Oct. 79	Jan. 80	Jan. 80	746.0	5	Feb. 81			
ALT Acft Maint Fac	1,150	1,150	Jan. 79	Aug. 79	Jan. 80	Jan. 80	742.0	5	Feb. 81			
Avionics Maint Fac	1,650	1,650	Jan. 79	Sept. 79	Jan. 80	Jan. 80	1,316.0	5	Feb. 81			
Total	3,690	3,690										
Seymour Johnson: Maint Dock (total)	2,650											Auth/not approp.

Shaw AFB:												
Mun Maint Stor Fac	2,150	2,150	Feb. 79	Jan. 80	(1)							
Weap Rel/Alt Avio Fac	630	630	Feb. 79	Jan. 80	(1)							
Total	2,780	2,780										
Howard AFB:												
Relocate Transmitter Site	1,000	1,000	Dec. 78	Sept. 79	Apr. 80				Dec. 80			
Security Facs	3,485	2,500	Aug. 78	May 79	(1)							Auth at $3,485/appr at $2,500.
Total	4,485	3,500										
TAC total	79,915	71,680										
Fiscal year 1980 total	515,761	488,226										
FISCAL YEAR 1979												
AAC												
Eielson AFB: ADAL Fire Station (total)	1,602	1,602	Oct. 77	Oct. 78	Feb. 79	Apr. 79	1,612.0	100	Feb. 80	Mar. 80		
Galena AFB: NAVAIDS—ASR/PAR (total)	540	540	Feb. 78	Oct. 78	Jan. 79							
Shemya AFB: NAVAIDS—ASR/PAR (total)	546	546	Jan. 78	Nov. 78	Feb. 79							
Various Locations: Special Operations Fac (total)	3,400	3,400	Aug. 77	Feb. 79	Jan. 80	Apr. 79	1,678.0	100	Oct. 79	Mar. 80		
AAC total	6,088	6,088										
USAFA												
Academy:												
ADAL Cadet Library	4,000	4,000	May 78	Apr. 80	(1)							
Replace Air Conditioning	635	635	Dec. 77	Nov. 78	Mar. 79	July 79	574.0	75	June 80			
USAFA total	4,635	4,635										
ADC												
Tyndall AFB:												
RAPCON Fac	1,046	1,046	Sept. 77	Oct. 78	Nov. 78	Dec. 78	891.0	100	Feb. 80	Mar. 80		
Regional Ops Control Center	5,500	5,500	Sept. 78	July 79	July 79	Sept. 79	5,190.0	1	Apr. 81			
BEQ	2,141	2,141	Aug. 78	Mar. 79	Apr. 79	Aug. 79	2,503.0	28	Oct. 80			
ADC total	8,687	8,687										

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
USAFE												
Langerkopf RRL: BEQ/Dining Fac (total)	1,332	1,332	Oct. 77	Dec. 78	Mar. 79	Sept. 79	1,070.0	5	Dec. 80			
Ramstein AB: Telecommunications Fac (total)	6,515	6,515	Jan. 77	Feb. 80	(1)							
Bentwaters RAF: Alt BEQ (total)	718	718	July 77	Sept. 78	Oct. 78	Jan. 79	847.0	50	June 80			
Upper Heyford RAF: Alt BEQ (total)	800	800	June 77	Sept. 78	Nov. 78	Jan. 79	655.0	85	June 80			
Decimomannu AB: Air Combat Maneuvering Instrument Fac (total).	986	986	Mar. 78	Mar. 79	Apr. 79	Nov. 79	721.0	5	June 81			(4).
Incirlik AB: NAVAIDS—ILS/ASR/PAR (total)	516	516	Jan. 78	Oct. 78	Jan. 79	Sept. 80			Oct. 80			
Various Locations:												
Tactical Control Improvements	3,975	3,975	June 78	Dec. 78	Feb. 79	Dec. 79	693.0	8	July 81			(4).
Airfield Protective Fac	19,131	19,131	Apr. 78	Dec. 78	Feb. 79	Aug. 79	762.0	40	Aug. 81			(4).
European Communications Improvement	2,040	2,040	Jan. 78	Dec. 78	Mar. 79	Dec. 79	2,231.0	14	June 80			(4).
Total	25,146	25,146										
USAFE	36,013	36,013										
ATC												
Columbus AFB: EMCS (total)	1,586	1,586	Apr. 78	Sept. 78	Dec. 78	Dec. 78	1,601.0	12	June 81			
Kessler AFB:												
Log Storage and Vehicle Maint Complex	7,015	7,015	Oct. 75	Sept. 77	Apr. 79	July 79	6,801.0	61	Dec. 80			
EMCS	820	820	Jan. 78	June 80	Sept. 80				May 81			
Total	7,835	7,835										
Lackland AFB:												
Automotive Maint Fac	2,245											
BEQ	4,700	4,700	Mar. 77	Feb. 78	Dec. 78	May 79	5,533.0	40	Dec. 80			RP.
Total	6,945	4,700										

Mather AFB:											
Consolidated Base Personnel Fac	2,710	2,710	Feb. 77	Nov. 78	Feb. 79	Apr. 79	2,601.0	87	Sept. 80		
Alt BEQ	1,812	1,812	July 77	Sept. 78	Dec. 78	Dec. 78	1,726.0	75	June 80		
Total	4,522	4,522									
Randolph AFB: Emergency Power Plant (total)	850	850	Sept. 77	Aug. 78	Nov. 78	May 79	932.0	99	Dec. 79	Mar. 80	
Reese AFB: EMCS (total)	742	742	June 78	June 79	Delayed						
Vance AFB: Acft Fuel Sys Maint Fac (total)	530	530	Sept. 77	June 78	Nov. 78	Apr. 79	594.0	92	May 80		
ATC total	23,010	20,765									
AFLC											
Hill AFB:											
Replace Taxiway	4,680	4,680	May 77	Feb. 78	Oct. 78	Dec. 78	3,874.0	100	Nov. 79	Nov. 79	
Flight Simulator Training Fac	1,184	1,184	Apr. 77	Nov. 78	Feb. 79	Mar. 79	1,177.0	99	May 80		
Addn to Depot Aircraft Fuel Sys Maint Fac	869	869	Sept. 77	Mar. 80	June 80						BR, RD.
Automotive Maint Fac	580	580	June 77	Nov. 78	Jan. 79	Feb. 79	638.0	79	June 80		
Alt Lighting System	850	850	Oct. 75	Feb. 80	(²)						
Total	8,163	8,163									RD.
Kelly AFB:											
Acft Engine Fuel Acc Rpr and Test Fac	9,900	9,900	Mar. 78	Sept. 78	Nov. 78	Dec. 78	9,404.0	99	Apr. 80		
Alt BEQ	1,930	1,930	Apr. 77	Sept. 78	Nov. 78	Nov. 78	2,240.0	76	Aug. 80		
Dining Fac	1,300	1,300	June 77	Dec. 78	Jan. 79	Mar. 79	1,572.0	87	June 80		
EMCS	3,300	3,300	Sept. 78	July 80	(¹)						
Water Storage Fac	789	789	Aug. 77	Apr. 78	Nov. 78	Nov. 78	735.0	99	Apr. 80		
Total	17,219	17,219									
McClellan AFB: Addn to Wastewater Trmt Sys (total).	3,700	3,700	Mar. 78	Sept. 78	Nov. 78	Feb. 79	2,971.0	95	May 80		
Newark AFS: Alt Heating and Air Conditioning Sys (total).	1,400	1,400	Feb. 77	Apr. 78	Mar. 79	Mar. 79	896.0	86	May 80		
Robins AFB:											
Alt BEQ	4,824	4,824	Feb. 78	Apr. 79	May 79	June 79	4,317.0	29	June 81		
EMCS	2,100	2,100	Feb. 78	June 79	Sept. 79	Sept. 79	1,910.0	4	Feb. 81		
Control Contaminated Water	2,500	2,500	June 78	Sept. 78	Dec. 79	Dec. 78	2,427.0	84	June 80		
Total	9,424	9,424									
Tinker AFB:											
Wing Headquarters Fac	1,323	1,323	Jan. 78	Nov. 78	Jan. 79	May 79	1,832.0	75	Aug. 80		
Fire Station	1,031	1,031	Jan. 78	Nov. 79	(¹)						
Total	2,354	2,354									

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
Wright-Patterson AFB:												
Fuels and Lubrications Lab	9,130	9,130	June 78	Nov. 79	May 80				Dec. 81			
Alt Mech Elec Stru Sys	1,120	1,120	Feb. 79	Feb. 80	(1)							
EMCS	3,350	3,350	June 77	June 80	(2)				May 82			
Total	13,600	13,600										
AFLC total	55,860	55,860										
MAC												
Altus AFB:												
Alt Acft Fuel Sys Maint Fac	503	503	July 77	Feb. 78	Nov. 78	Sept. 79	546.0	30	Nov. 80			
EMCS	608	608	Mar. 78	Dec. 78	Feb. 78	Apr. 79	6,087.0	55	Sept. 80			
Total	1,111	1,111										
Dover AFB:												
NAVAIDS—ILS	711	711	May 77	Nov. 78	Dec. 78	Jan. 79	743.0	100	Dec. 79	Nov. 79		
Acft Corrosion Control Fac	7,310	7,310	July 77	Feb. 80	(1)							BR, RD.
Total	8,021	8,021										
Kirtland AFB:												
Modify Steam Lines	650	650	Jan. 78	Nov. 78								CN.
EMCS	800	800	June 78	Feb. 79	Mar. 79	July 79	803.0	69	Jan. 81			
Total	1,450	1,450										
Little Rock AFB: Modify Heating Plants (total)	504	504	Apr. 77	Sept. 78	Nov. 78	Mar. 79	597.0	100	Apr. 80	Mar. 80		
McChord AFB: Alt Central Heating Plant (total)	594	594	Dec. 77	Oct. 78	Dec. 78	Mar. 79	620.0	90	June 80			
Norton AFB: Install Building Insulation (total)	506	506	Dec. 77	June 78	Jan. 79	June 79	622.0	97	May 80			

Scott AFB:												
Squadron Flight Ops Fac	1,500											RP.
Acft Fuel Sys Maint Fac	1,120	1,120	Sept. 77	Dec. 78	Apr. 80				Oct. 80			BR, RD.
Fire Protection Medical Fac	534	534	Dec. 77	Feb. 79	Apr. 79	May 79	668.0	64	July 80			
Install Insulation, Storm Windows, Vestibule.	860	860	Sept. 77	Sept. 78	Nov. 78	Dec. 78	873.0	100	Sept. 79	Dec. 79		
Total	4,014	2,514										
Rhein Main AB:												
ADAL Air Freight Terminal	6,550											
NCO Open Mess	2,800											
Officers Open Mess		2,744	Feb. 77	Nov. 79	(1)							RP. CN.
Total	9,350	2,744										RD.[1]
MAC total	25,550	17,444										
PACAF												
Kadena AB:												
Maint Fac—Tactical Acft	3,263	3,263	Jan. 78	Nov. 78	Dec. 78	Dec. 78	3,603	95	Oct. 80			
Maint Fac—Special Duty Acft	1,536	1,536	Jan. 78	Feb. 79	Mar. 79	June 79	1,395.0	78	June 80			
Total	4,799	4,799										
Kunsan AB:												
Jet Fuel Storage Fac	5,390	5,390	Apr. 77	Jan. 79	Feb. 79	Sept. 79	5,190.0	8	June 81			
Munitions Preload/Holding Fac	1,258	1,258	Oct. 77	Oct. 78	Dec. 78	Sept. 79	1,535.0	32	Sept. 80			
Total	6,648	6,648										
Osan AB:												
Jet Fuel Storage Fac	5,130	5,130	Dec. 77	Dec. 78	Mar. 79	Sept. 79	4,661.0	8	June 81			
Munitions Preload/Holding Fac	2,385	2,385	Dec. 77	Jan. 79	Mar. 79	Sept. 79	2,695.0	30	Nov. 80			
Total	7,515	7,515										
Various Locations: Special Ops Facilities (total)	2,800	2,800	Oct. 78	Apr. 80	(1)							
PACAF total	21,762	2 ,762										
SAC												
Barksdale AFB: Addn to Alert Apron (total)	510	510	Oct. 77	Apr. 77	Dec. 78	Aug. 79	811.0	42	May 80			
Beale AFB:												
Approach Lights	556	556	Oct. 77	June 78	Nov. 78	Dec. 78	402.0	100	Dec. 79	Nov. 79		
Dining Fac	1,700	1,700	June 77	Dec. 78	Dec. 79	Dec. 79	2,014.0	2	Apr. 81			
Total	2,256	2,256										

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
Carswell AFB: Base Engineering Fac (total)	2,910	2,910	June 76	Feb. 77	Mar. 79	Mar. 79	3,374.0	47	July 80			
Castle AFB:												
Flight Simulator Training Fac	8,053	8,053	Aug. 78	Nov. 78	Feb. 79	Mar. 79	7,950.0	75	Dec. 80			
Acft Corrosion Control Fac	4,058											
Chapel Center	1,240	1,240	Nov. 76	Feb. 80	May 80							
Total	13,351	9,293										RP.
Dyess AFB: Acft Corrosion Control Fac (total)	2,670								Apr. 81			RD.
Ellsworth AFB:												RP.
Alt BEQ	2,739	2,739	Jan. 77	Nov. 78	Feb. 79	Mar. 79	2,540.0	64	Sept. 80			
Library	715	715	Sept. 76	May 78	Dec. 78	Dec. 78	662.0	82	Apr. 80			
Total	3,454	3,454										
Fairchild AFB: EMCS (total)	650	650	Mar. 78	Apr. 79	June 79	Aug. 79	650.0	25	June 80			
Francis E. Warren AFB: Heating Plant (total)	23,143	23,143	May 77	Nov. 78	Jan. 79	Apr. 79	21,760.0	49	Aug. 81			
Grand Forks AFB:												
Storm Windows and Insulation	734	734	Jan. 78	Aug. 78	Dec. 78	Apr. 79	586.0	80	May 80			
EMCS	610	610	Dec. 78	June 79	(1)							
Total	1,344	1,344										
Griffiss AFB:												
Acft Control Tower	950	950	Mar. 77	Oct. 78	Dec. 78	Jan. 79	1,108.0	99	Apr. 80			
Alt BEQ	5,249	5,249	Apr. 78	Sept. 78	Dec. 78	Jan. 79	5,402.0	51	Feb. 81			
Fire Station	1,300	1,300	July 78	Feb. 79	Mar. 79	Apr. 79	1,211.0	75	May 80			
Total	7,499	7,499										

Malmstrom AFB:											
Alt BEQ	4,200										CN.
Education Center	1,200	1,200	Sept. 78	May 79	July 79	Sept. 79	1,260.0	20	Nov. 80		
Total	5,400	1,200									
McConnell AFB: Alt BEQ (total)	2,200	2,200	Mar. 78	Dec. 78	Mar. 79	Apr. 79	2,453.0	63	Jan. 80		
Minot AFB: Liquid Fuel Pump Station (total)	1,182	1,182	Nov. 77	Dec. 78	Feb. 79	Mar. 79	1,155.0	96	Apr. 80		
Plattsburgh AFB:											
Flight Simulator Training Fac	4,170	4,170	May 77	Oct. 78	Dec. 78	Sept. 79	3,899.0	30	Nov. 80		
Support Equipment Fac	1,335	1,335	Nov. 77	Nov. 78	Dec. 78	Jan. 79	1,239.0	90	June 80		
Base Engineer Fac	2,708	2,708	Sept. 78	May 79	June 79	May 79	2,673.0	40	Oct. 80		
Consolidated Personnel Support Fac	1,920	1,920	Sept. 78	May 79	June 79	May 79	1,789.0	25	Dec. 80		
Temporary Lodging Fac	699	699	Oct. 78	May 79	June 79	Apr. 79	730.0	100	Mar. 80		
Electrical Substation	561	561	Nov. 77	Sept. 78	Dec. 78	Mar. 79	404.0	95	May 80		
Total	11,393	11,393									
Rickenbacker AFB: Sewage Main Regional Connection (total).	946	946	Dec. 77	Oct. 78	(1)						HD.
Vandenberg AFB:											
Alt Titan III	1,159	1,159	Apr. 78	July 79	Apr. 80						
Communications Ops Ctr	3,823	3,823	May 77	Aug. 78	Nov. 78	Nov. 78	3,049.0	99	Mar. 80		BR, CV.
Space Transportation Sys Airfield Fac	32,100										RP.
Space Transportation Sys Launch Complex	104,700	104,700	Aug. 77	May 80	Jan. 79, Apr. 80.	Jan. 79	4,169.0		Apr. 82		CV.
Total	141,782	109,682									
Anderson AFB: Refueling Vehicle Maint Fac (total).	1,120	1,120	Dec. 77	July 78	Nov. 78	Dec. 78	675.0	87	May 80		
SAC total	221,810	178,782									
AFSC											
Arnold EDC: Propulsion Wind Tunnel—High Angle Automatic Sting (total).	2,710	2,710	Feb. 77	Jan. 79	(1)						
Buckley ANGB: Emergency Elec Power Plant (total).	2,628	2,628	June 78	Nov. 78	Feb. 79	Feb. 79	1,841.0	15	Dec. 80		
Cape Canaveral AFS:											
Alt Titan 34D	824	824	Feb. 78	Sept. 78	Jan. 79	Feb. 79	621.2	98	Mar. 80		
Space Transportation Sys Payload Processing Fac.	8,800	8,800	Feb. 78	Oct. 78	Feb. 79	Feb. 79	5,446.6	85	July 80		
Total	9,624	9,624									

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
Edwards AFB:												
Nondestructive Development and Evaluation Fac.	1,023	1,023	Jan. 77	June 78	Oct. 78	Mar. 79	1,332.0	91	May 80			
EMCS	2,750	2,750	Jan. 77	May 80	(1)							
Heat/Cooling Controls and Insulate Fac	650	650	Oct. 79	May 80	(1)							RD.
Total	4,423	4,423										
Eglin AFB:												
Acft Arm/Disarm Pads	815	815	Dec. 77	June 78	Dec. 78	Dec. 78	979.0	100	Sept. 79	Sept. 79		
Alt BEQ—Aux 9	865	865	Apr. 77	Feb. 78	Dec. 78	Dec. 78	834.0	99	Apr. 80			
Chapel Center—Aux 9	1,190	1,190	Apr. 77	Feb. 80	(1)							BR, RD.
Modify Heating Plants	709	709	Feb. 78	Oct. 78	Dec. 78	Feb. 79	603.0	75	Dec. 80			
Total	3,579	3,579										
Hanscom AFB:												
Antenna Test Fac	690	690	Dec. 77	Oct. 78	Feb. 79	June 79	1,014.0	40	Sept. 80			
Alt BEQ	547	547	May 77	June 78	Dec. 78	Dec. 78	505.0	100	Feb. 80	July 79	$505.4	FC.
EMCS	2,000	2,000	Aug. 79	Feb. 80	(3)				Dec. 81			RD.
Total	3,237	3,237										
Patrick AFB: Alt BEQ (total)	3,504	3,504	Jan. 78	Nov. 78	Dec. 78	Mar. 79	3,133.0	43	June 81			
Various Locations: Joint Surveillance Sys (total)	688	688	Oct. 77	Dec. 78	Mar. 79	Aug. 79	494.0	60	July 80			
AFSC total	30,393	30,393										
TAC												
Cannon AFB: Alt BEQ	4,129	4,129	Feb. 77	Dec. 77	Dec. 78	Dec. 78	4,269.0	55	Dec. 80			
Davis-Monthan AFB: Tactical Air Support Complex (total).	1,610	1,610	Nov. 77	Aug. 78	Dec. 78	Dec. 78	1,691.0	100	Dec. 79	Jan. 80		

England AFB: Automotive Maint Fac (total)	1,875	1,875	Nov. 77	Oct. 79	Apr. 80							BR, CV.
George AFB:												
Mobility Storage Fac	540	540	Oct. 77	May 78	Oct. 78	Nov. 78	550.0	100	July 79	July 79	550.0	
Alt BEQ	1,852	1,852	Nov. 77	Sept. 78	Nov. 78	Dec. 78	1,700.0	100	Mar. 80	Mar. 80		
Total	2,392	2,392										
Holloman AFB:												
Consolidated Base Personnel Office	2,110	2,110	Nov. 77	Jan. 78	Nov. 78	Dec. 78	2,353.0	99	Jan. 80	Feb. 80		
Visiting Officer Quarters	975	975	Jan. 78	June 78	Nov. 78	Jan. 79	1,216.0	99	Dec. 79	Jan. 80		
EMCS	540	540	Feb. 78	Nov. 78	(1)							
Modify Heating Plants	510	510	Jan. 78	Oct. 78	Dec. 78	Mar. 79	330.0	99	Jan. 80	Mar. 80		
Total	4,135	4,135										
Langley AFB:												
Automotive Maint Complex	2,300											
EMCS	1,239	1,239	Oct. 76	July 78	Feb. 79							RP.
Total	3,539	1,239										
Luke AFB:												
Alt BEQ	1,493	1,493	July 77	July 78	Nov. 78	Nov. 78	1,336.0	100	Jan. 80	Feb. 80		
Gymnasium	2,350	2,350	Aug. 77	July 78	Nov. 78	Nov. 78	2,662.0	100	Jan. 80	Feb. 80		
Total	3,843	3,843										
Moody AFB:												
Flight Simulator Training Fac	900	900	Nov. 77	Aug. 78								
Alt BEQ	1,443	1,443	Apr. 77	Sept. 78	Oct. 78	Dec. 78	1,688.0	56	Aug. 80			DF.
Total	2,343	2,343										
Mount Home AFB: Alt BEQ (total)	2,644	2,644	Sept. 77	Oct. 78	Mar. 79	June 79	2,193.0	66	Sept. 80			
Myrtle Beach AFB:												
Flight Simulator Training Fac	894	894	Mov. 76	Feb. 79	May 79	May 79	1,024.0	63	June 80			
Connect to Regional Wastewater Trmt	1,800	1,800	Oct. 77	Nov. 78	Jan. 79	May 80						Connection charge. City has started construction of sewage fac.
Total	2,694	2,694										

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design: Start	Design: Completed	Award estimated Mar. 31, 1980	Construction: Contract award	Construction: Award CWE	Construction: Status Mar. 31, 1980	Beneficial occupancy: Estimated	Beneficial occupancy: Actual	Total project expenditure when completed	Remarks
Nellis AFB:												
Range Central Control Fac	4,949	4,949	Nov. 77	Nov. 78	Feb. 79	Jan. 79	4,724.0	85	Sept. 80			
Maiht & Support Complex-Tonopah	7,002	7,002	Dec. 77	Dec. 78	Mar. 79	Mar. 79	6,379.0	25	Sept. 80			
Alt BEQ	552	552	Nov. 77	Sept. 78	Dec. 78	Dec. 78	533.0	100	Aug. 79	Aug. 79	533.0	
BEQ	3,547	3,547	Nov. 77	Oct. 78	May 79	June 79	4,694.0	15	Sept. 80			
EMCS	900	900	Oct. 76	Aug. 78	(1)							
Total	16,950	16,950										
Seymour Johnson AFB: Small Acft Maint Dock (total).	2,950	2,950	Feb. 77	May 78	Oct. 78	Dec. 78	2,981.0	48	Oct. 80			
Shaw AFB:												
Airfield Lighting	2,500	2,500	June 78	Feb. 79	Mar. 79	Sept. 79	2,035.0	40	Aug. 80			
Electronics Countermeasure Fac	584	584	Sept. 78	May 79	July 79	Sept. 79	703.0	29	Oct. 80			
Precision Measurement Equipment Lab	706	706	Sept. 78	Apr. 79	July 79	Sept. 79	606.0	49	Oct. 80			
Total	3,790	3,790										
Howard AFB: NAVAIDS—ASR/PAR (total)	718	718	Dec. 77	Sept. 78	Dec. 78	Jan. 79	748.0	76	Aug. 80			
TAC total	53,612	53,612										
Fiscal year 1979 total	487,420	434,401										
FISCAL YEAR 1978					Sept. 30, 1977							
AAC												
Eielson AFB: Alt Sewage Trmt and Disposal Fac	297	297	Sept. 76	Sept. 77	Nov. 77	Dec. 77	249.0	100	Oct. 78	Oct. 78		
Elmendorf AFB:												
Jet Fuel Storage Fac	4,900											CN.
Alt Sewage Trmt Fac	142	142	Sept. 76	Apr. 79	June 79	Sept. 79	20.0	1	Dec. 79			SR.[2]
Total	5,042	142										

Shemay AFB:												
Base Flight Ops Fac	1,440	1,440	Oct. 76	Nov. 77	Feb. 78	Apr. 78	1,931.0	100	July 79	July 79		
Gymnasium	1,654	1,654	Oct. 76	Nov. 77	Feb. 78	Apr. 78	1,870.0	100	May 79	July 79		SR.[6]
Alt Sewage Trmt and Disposal Fac	853	853	Sept. 76	Feb. 79	Aug. 79	Sept. 79	99.0		Sept. 80			
Total	3,947	3,947										
King Salmon Apt: Alt Sewage Trmt and Disposal Fac (total).	631	631	Sept. 76	Feb. 79								HD.[7]
AAC total	9,917	5,017										
ADC												
Kingsley Fld: ADAL Runway Spec Lighting (total).	115	115										CN.
Peterson AFB:												
EMCS	623	623	July 76	Mar. 79	June 79							RD.
Alt Heating Plants	150	150	Apr. 77	Oct. 77	Dec. 77	Apr. 78	134.0	100	Dec. 78	Dec. 78	134.0	
Total	773	773										
Tyndall AFB:												
AF Civil Engr Center	3,860	3,860	Oct. 76	May 78	July 78	July 78	3,383.0	100	Aug. 78	Sept. 79	4,053.0	
EMCS	690	690	July 76	Apr. 78	Mar. 79							RD.
Total	4,550	4,550										
Sondrestrom AB: NAVAIDS-ASR/PAR (total)	310	310	June 77	Jan. 78	Apr. 78	Apr. 78	299.0	99	Sept. 79			
Thule AB: NAVAIDS-ILS (total)	350	350	June 77	Jan. 78	Apr. 78	Apr. 78	95.0	100	Sept. 78	Sept. 79		
ADC total	6,098	6,098										
USAFA												
Academy:												
Add to Chapel	1,614	1,614	Apr. 77	July 79	Sept. 79							CN.
Alt Air Conditioning System	126	126	Sept. 76	Aug. 77	Oct. 77	Nov. 77	81.0	100	June 78	June 78		
Alt Sewage Trmt and Disposal Fac	132	132	Feb. 76	Oct. 76	Oct. 77	Nov. 77	123.0	100	June 78	May 78		
USAFA total	1,872	1,872										

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
AU												
Gunter AFB: Alter Air Conditioning Sys (AU total)	248	248	Oct. 76	Dec. 77	Dec. 77	Dec. 77	125.0	100	July 78			
USAFE												
Germany:												
Hahn AB:												
NAVAIDS—ILS	210	210	Aug. 77	July 78	Dec. 78	May 79	357.0	80	June 80			RD.
NAVAIDS—ASR/PAR	196	196	July 77	May 78	Dec. 78	July 79	219.0	32	Aug. 80			RD.
Total	406	406										
Ramstein AB:												
Hazardous Material Proc Fac	1,900	1,900	Sept. 76	Oct. 77	Feb. 78	Apr. 78	2,281.0	100	Apr. 79	Sept. 79		
Telecommunications Center	5,500											RP.
NAVAIDS—RAPCON	840	840	July 77	Feb. 78	Apr. 78	July 78	628.0	100	Apr. 79	May 79	858.0	
ADAL Automotive Maint Fac	405	405	Jan. 77	Oct. 77	Feb. 78	Mar. 78	425.0	100	Feb. 79	June 79		
Total	8,645	3,145										
Sembach AB:												
Add to Combat Ops Center	1,665	1,665	Jan. 77	Dec. 78								BR, RP.
Add to Dependent School	4,900	4,900	May 76	Sept. 77	Jan. 78	Mar. 78	5,213.0	100	May 79	June 79		
Total	6,565	6,565										
Spangdahlem AB:												
NAVAIDS—ILS	210	210	Aug. 77	Feb. 78	Dec. 78	May 79	236.0	80	May 80			RD.
NAVAIDS—PAR	90	90	July 77	Aug. 78	Dec. 78	June 79	50.0	100	Aug. 80	Feb. 80		RD.
Pol Operations Fac	340	340	Nov. 77	Jan. 79	Mar. 79	Sept. 79	388.0	52	June 80			
Total	640	640										
Zweibrucken AB: NAVAIDS—ILS (total)	161	161	Aug. 77	July 78	Nov. 78	Apr. 79	309.0	98	July 80			

United Kingdom:												
RAF Alconbury:												
Acft Arresting Barrier Sys	274	274	Dec. 77	Sept. 78	Nov. 78	Jan. 79	269.0	99	Nov. 79			
NAVAIDS-ASR/PAR	303	303	Jan. 77	May 79	Jan. 81				Dec. 81			RP.
Total	577	577										
RAF Bentwaters:												
NAVAIDS-ASR/PAR	171	171	Jan. 78	July 79	May 79	Oct. 79	333.0	23	Sept. 80			RD.
Dispensary	7,327	7,327	July 76	Dec. 77	Feb. 78	June 78	8,476.0	52	Nov. 80			
Total	7,498	7,498										
RAF Lakenheath: NAVAIDS—ILS (total)	127	127	Jan. 77	Mar. 79	Jan. 81				Dec. 81			RP (2).
RAF Upper Heyford:												
Acft Fuel Support Fac	299	299	Jan. 78	May 78	Aug. 78	Oct. 78	299.0	100	Sept. 79	Sept. 79		
NAVAIDS-ASR/PAR	370	370	Jan. 77	Aug. 78	Dec. 78	Jan. 79	344.0	95	Oct. 79			RD.
NAVAIDS—ILS	121	121	Jan. 77	Apr. 78	Sept. 78	Nov. 78	138.0	99	Oct. 79			RD.
Airfield Security Improvements	2,609											
Total	3,399	790										RP.
RAF Woodbridge: NAVAIDS-PAR (total)	129	129										CN.
USAFE VARIOUS												
Aviano AB: NAVAIDS-ASR/PAR (total)	180	180	June 77	Aug. 79	Oct. 79	Dec. 79	240.0	13	Oct. 80			RD.
Zaragoza AB: Visiting Officer Quarters (total)	1,825	1,825	Feb. 77	Sept. 77	Nov. 77	Dec. 77	1,469.0	100	Dec. 78	Mar. 79	1,541.0	
Various Locations, Europe:												
Airfield Protective Facilities	40,400	40,400	Nov. 76	July 79	June 78	Aug. 78	43,513.0	30	May 81			CR.[9]
Essential Acft Operational Facilities	25,000	25,000	June 77	Nov. 78	May 78	July 78	23,385.0	71	Oct. 80			
Passive Defense Improvements	5,000	5,000	June 77	Nov. 78	Mar. 78	Mar. 78	3,797.0	95	Aug. 80			
Hardened Avionics Maint Fac	5,500	5,500	Jan. 77	Apr. 79	Feb. 78	June 78	7,195.0	22	Dec. 80			
Total	75,900	75,900										
USAFE total	106,052	97,943										
ATC												
Chanute AFB:												
Smoke Suppression Fire Trng Fac	626	626	Jan. 76	Mar. 78								DF.[9]
Sewage Trmt and Disp Fac	7,400	7,400	Oct. 76	Sept. 76	Aug. 79	July 79	1,000.0	2	May 81			HD, BC.
Total	8,026	8,026										

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
Columbus AFB:												
NAVAIDS-PAR	77	77										CN
Industrial Waste Trmt and Disp Fac	1,106	1,106	Oct. 76	Sept. 77	Nov. 77	Nov. 77	1,027.0	FC	June 79	Aug. 79	985.0	
Total	1,183	1,183										
Keesler AFB: Acft Control Tower (total)	850	642	Nov. 76	July 78	Feb. 78	Sept. 78	672.0	99	Aug. 79	Nov. 79		
Lackland AFB: Dental Clinic (total)	4,700	4,700	Sept. 76	May 78	May 78	Aug. 78	3,924.0	99	Mar. 80			([10]).
Lowry AFB:												
Avionics Sys Trng Fac	3,380	3,380	Sept. 76	Jan. 78	Aug. 79	Aug. 79	3,929.0	18	Dec. 80			
EMCS	1,808	1,808	July 77	Apr. 78	Dec. 79	Sept. 79	1,259.0	90	May 80			
Total	5,188	5,188										
Mather AFB: Alt Heating Plants (total)	115	115	Aug. 77	Apr. 78	Oct. 78	Oct. 78	112.0	FC	July 79	Feb. 80	111.0	
Randolph AFB:												
NAVAIDS-ILS	91	91	Sept. 77	June 78	June 78	Oct. 78	112.0	PC	Sept. 79	Sept. 79		
ADAL Acft Fuel Sys Main Fac	334	334	Oct. 76	Aug. 77	Oct. 77	Oct. 77	331.0	PC	Dec. 78	Jan. 79		
Total	425	425										
Sheppard AFB: Cold Storage FAC (total)	980	980	Mar. 77	Dec. 77	Dec. 77	Apr. 78	1,102.0	PC	May 79	Sept. 79		
Williams AFB:												
NAVAIDS-ILS	125	125	Aug. 77	Dec. 77	July 77	Sept. 78	156.0	PC	May 79	May 79	157.0	RP.
NAVAIDS-PAR	122											
Parachute/Dinghy Shop	432	432	Jan. 77	Nov. 77	July 78	Sept. 78	587.0	PC	July 79	Dec. 79	591.0	
Total	679	557										
ATC total	22,146	21,816										

AFLC												
Hill AFB:												
Acft Run-up Fac	380	380	Jan. 77	July 77	Dec. 77	Jan. 78	425.0	100	Aug. 78	Aug. 78	438.0	FC.
Squadron Flight Ops Fac	914	914	Feb. 77	Aug. 77	Oct. 77	Oct. 77	860.0	100	Oct. 78	Oct. 79	908.0	FC.
Fld Trng Fac	1,535	1,535	Jan. 77	July 77	Oct. 77	Oct. 77	1,240.0	100	Oct. 78	Sept. 78	1,261.0	FC.
ADAL Acft Maint Facs	3,388	3,388	Feb. 77	Oct. 77	Dec. 77	Jan. 78	2,720.0	100	Nov. 78	Nov. 78	3,513.0	
Depot Acft Fuel Sys Maint Fac	1,600	1,600	Jan. 77	Feb. 78	June 78	June 78	1,710.0	100	Apr. 80	Mar. 80		
ADAL Missile Svc Shop	2,622	2,622	Feb. 76	Aug. 77	Dec. 77	Dec. 77	3,048.0	100	Jan. 80	Nov. 79		
Add to Avionics Shop	468	468	Mar. 77	July 77	Nov. 77	Dec. 77	307.0	100	Sept. 78	Sept. 78	323.0	FC.
Jet Fuel Storage Fac	1,130	1,130	Jan. 77	Sept. 77	Dec. 77	Jan. 78	880.0	100	Jan. 79	June 79	967.0	
Hazardous Mat Stor Fac	1,558	1,558	Apr. 77	May 78	Sept. 78	Sept. 78	1,828.0	95	June 80			
Acft Maint Control Fac	1,013	1,013	Mar. 77	Sept. 77	Nov. 77	Dec. 77	842.0	100	Nov. 78	Nov. 78	862.0	FC.
BEQ	3,310	3,310	Apr. 77	Mar. 78	May 78	May 78	3,050.0	100	Feb. 80	Mar. 80		
Composite Rec Fac	662	662	Dec. 76	Sept. 77	Dec. 77	Jan. 78	789.0	100	Nov. 78	Apr. 79	817.0	
Alt Heating Sys	1,500	1,500	Dec. 76	Oct. 77	Feb. 78	Feb. 78	1,496.0	99	Apr. 80			
Alt Compressed Air Sys	240	240	Dec. 76	Sept. 77	Nov. 77	Nov. 77	147.0	100	June 78	Sept. 78	152.0	FC.
EMCS	2,700											RP.
Total	23,020	20,320										
Kelley AFB:												
NAVAIDS-VORTAC	134	134	Aug. 77	June 78	June 78	Oct. 78	165.0	99	Sept. 79	Apr. 80		
Logistical Mat Stor Fac	5,676	5,676	Apr. 76	Jan. 77	Oct. 77	Nov. 77	6,702.0	99	Dec. 79	Apr. 80		
Alt lighting Sys	2,300	2,300	Feb. 77	June 78	May 78	Aug. 78	1,178.0	99	Jan. 81			
EMCS	1,768											
Total	9,878	8,110										
McClellan AFB:												
Repair Heating Dist Sys	886	886	Nov. 76	May 78	July 78	Aug. 78	718.0	100	June 79	July 79	760.0	
Alt Pol Storage	3,200	3,200										
Total	4,086	4,086										
Newark AFS: EMCS (total)	2,080											CN. RP.
Robins AFB:												
Alt Heating and Steam Mains	2,669	2,669	Apr. 76	Nov. 77	Mar. 78	Mar. 78	1,877.0	100	Feb. 80			
Alt AC Sys	1,500	1,500	Nov. 76	Apr. 78	July 78	Sept. 78	1,584.0	99	May 80			
Alt Indus Sewage Trmt Plant	7,149	7,149	Sept. 76	Oct. 77	Dec. 77	Dec. 77	7,984.0	86	Nov. 80			
Total	11,318	11,318										

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
Tinker AFB:												
Acft Fuel Sys Maint Fac	3,220	3,220	Feb. 77	Nov. 77	Nov. 77	Dec. 78	5,024.0	91	May 80			
ADAL Composite Fac	8,800	8,800	Aug. 76	Nov. 77	Feb. 78	Feb. 78	8,484.0	75	Sept. 81			
Alt Lighting Sys	584	584	Oct. 76	Aug. 77	Nov. 77	Nov. 77	531.0	100	Nov. 78	Feb. 79		
Alt Waste Mains	290	290	Oct. 76	Aug. 77	Nov. 77	Nov. 77	191.0	100	Sept. 78	June 79		
Total	12,894	12,894										
Wright-Patterson AFB:												
ADAL Tech Intel Ops Fac	1,893											RP.
Acft Survivability Research Fac	1,821	1,821	Mar. 77	Apr. 79	Feb. 79	Aug. 79	1,874.0	7	Apr. 81			RD.
Repair Heating Dist Sys	1,210	1,210	Feb. 77	Aug. 78	Oct. 78	Nov. 78	490.0	100	Mar. 80			
Alt AC Sys	350	350	Oct. 77	Oct. 78	Nov. 78	Dec. 78	111.0	100	Nov. 79	Aug. 79		
Alt Lighting Sys	1,000	1,000	Mar. 77	Nov. 78	Jan. 79	Jan. 79	150.0	100	July 79	Aug. 79		RP.
EMCS	1,000											
Total	7,274	4,381										
AFLC total	70,550	61,109										
MAC												
Altus AFB:												
NAVAIDS–ILS	145	145	Aug. 77	June 78	June 78	Oct. 78	131.0	100	Sept. 79	Sept. 79	131.0	
Sanitary Sewage Trmt and Disp	[11] 660	[11] 660										
Total	805	805										
Andrews AFB:												
NAVAIDS–PAR	90											CN.
ADAL Security Police Ops Fac	692	692	June 76	Aug. 77	Nov. 77	Dec. 77	539.0	99	Feb. 80	Apr. 79	592.0	
Repair Heating Dist Sys	2,844	2,844	Oct. 76	Nov. 77	Dec. 77	Dec. 77	2,352.0	99	May 80			
Total	3,626	3,536										

Bolling AFB: Storm Windows (total)	133	133	Mar. 77	Sept. 77	Dec. 77	Dec. 77	133.0	100	Mar. 79	Jan. 79	140.0	
Dover AFB: NAVAIDS–ILS (total)	165											RP.
Little Rock AFB: EMCS (total)	573	573	June 77	Mar. 78	June 78	Aug. 78	660.0	67	Aug. 80			
McChord AFB:												
NAVAIDS–ILS	133											RP
EMCS	1,008	1,008	July 77	Sept. 78	Nov. 78	June 79	961.0	4	June 81			
Total	1,141	1,008										
McGuire AFB:												
NAVAIDS-ILS	225	225										CN.
Refueling Vehicle Maint Shop	415	415	Jan. 77	Aug. 77	Dec. 77	Dec. 77	345.0	100	June 79	Sept. 79	345.0	
Total	640	640										
Norton AFB:												
Repair Steam Dist Sys	430	430	Nov. 76	Sept. 77	Dec. 77	Jan. 78	435.0	100	Mar. 79	Sept. 79	448.0	
Solar Process Water	444	444	Apr. 77	Mar. 78	June 78	July 78	440.0	100	Oct. 79	June 79	440.0	
Total	874	874										
Pope AFB:												
Replace and Widen Taxiways	765	765	Oct. 76	Aug. 77	Oct. 77	Nov. 77	781.0	100	Apr. 79	Nov. 78	771.0	
Security Police Ops Fac	354	354	Oct. 76	Apr. 78	Aug. 78	Aug. 78	421.0	100	June 79	Aug. 79	421.0	
EMCS	550	550	Sept. 77	Aug. 78	Jan. 79	June 79	560.0	36	Aug. 80			
Total	1,669	1,669										
Travis AFB:												
NAVAIDS-ILS	120											RP.
Acft Corrosion Control Fac	5,800	5,800	Dec. 76	Mar. 77	Oct. 77	Oct. 77	6,148.0	99	Apr. 80			
Alt BEQ	3,560	3,560	June 77	Jan. 78	Apr. 78	Apr. 78	3,156.0	82	Aug. 80			
EMCS	500	500	June 77	May 78	Aug. 78	Sept. 78	488.0	92	July 80			
Total	9,980	9,860										
MAC total	19,606	19,098										
PACAF												
Hickam AFB: Acft Feul Supply Sys (total)	2,140	2,140	Nov. 75	Sept. 77	Nov. 77	Nov. 77	1,208.0	100	Jan. 79	June 79		

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
Kadena AB:												
NAVAIDS-ILS	185	185	Sept. 77	Mar. 78	June 78	Aug. 78	109.0	100	June 79	Nov. 79		
Taxiway Lighting	443	443	Feb. 76	Feb. 78	Dec. 78	Apr. 78	236.0	100	Nov. 79			
Flight Simulator Trng Fac	1,400	1,400	July 77	Nov. 77	Feb. 78	Mar. 78	1,024.0	100	May 79	Nov. 79		
Sanitary Sewage Main	344	344	Aug. 76	Dec. 77	Jan. 78	Mar. 78	245.0	98	Apr. 80			
Total	2,372	2,372										
Yokota AB: Solid Waste Disp Fac (total)	2,448											RP.
Osan AB: Acft Corrosion Control Fac (total)	1,255	1,255	Oct. 77	June 79	Feb. 79	Sept. 79	1,568.0	9	Dec. 80			RD.
PACAF total	8,215	5,767										
SAC												
Barksdale AFB:												
Alt AC Sys and Install Insulation	368	368	Dec. 76	Dec. 77	Dec. 77	Feb. 78	388.0	100	Dec. 78	Apr. 79	380.0	
Alt Heating Plants	140	140	Dec. 76	July 77	Nov. 77	Nov. 77	137.0	100	May 78	May 78	137.0	
Sanitary Sewage Mains	1,530	1,530	Nov. 77	July 78	Aug. 78	Sept. 78	694.0	99	Apr. 80		694.0	
Industrial Waste Trmt and Disp	215	215	Mar. 77	Oct. 77	Dec. 77	June 78	320.0	100	Apr. 79	Apr. 79		
Total	2,253	2,253										
Beale AFB: EMCS (total)	409	409	Sept. 76	June 79	Jan. 79	Aug. 79	435.0	3	July 80			RD.
Carswell AFB: NAVAIDS—ASR/PAR (total)	400											RP.
Castle AFB:												
NAVAIDS—ILS	134	134	June 77	Dec. 77	May 78	June 78	141.0	85	Oct. 78			RD.
EMCS	650	650	June 77	Feb. 79	May 79	Sept. 79	426.0	2	Sept. 80			
Alt Heating Plants	100	100	Mar. 77	Aug. 77	Mar. 78	Apr. 78	93.0	99	July 79			
Total	884	884										

Ellsworth AFB: Addn to Comm/Elec Shop (total)	251	251	Mar. 77	Mar. 78	May 78	May 78	169.0	100	Apr. 79	July 79		
Griffiss AFB: ADAL Elec Research Lab (total)	645	645	Apr. 77	Nov. 77	Dec. 77	Dec. 77	513.0	100	Nov. 78			
Grissom AFB: Alt Heating Plant (total)	6,300	6,300	Mar. 76	Aug. 77	Oct. 77	Jan. 78	5,867.0	95	June 80			
March AFB: ADAL Acft Corrosion Control Fac (total).	1,387											RP.
McConnell AFB:												
NAVAIDS—ILS	116	116	Jan. 76	Oct. 76	May 78							BR.
Storm Windows	100	100	Sept. 77	Nov. 78	Mar. 78	May 78	51.0	100	Oct. 78	Oct. 78		
Total	216	216										
Offutt AFB: ADAL Emergency Power Plant (total)	1,364	1,364	May 76	July 78	Aug. 78	Sept. 78	3,113.0	91	May 80			
Pease AFB: Acft Control Tower (total)	910	910	Dec. 75	May 77	Nov. 77	Nov. 77	890.0	100	Apr. 79	Aug. 79		
Plattsburgh AFB:												
NAVAIDS—ASR	140	140	Apr. 78	Nov. 78	Jan. 79	Jan. 79	142.0	92	Jan. 80			
EMCS	378	378	Sept. 76	Sept. 78	Apr. 79							RP.
Total	518	518										
Rickenbacker AFB: NAVAIDS—ILS (total)	82											CN.
Vandenberg AFB:												
EMCS	1,653	1,653	Mar. 77	Feb. 78	Aug. 78	July 78	1,464.0	72	June 80			
Alt Heating Plants	540	540	Jan. 77	Apr. 78	Sept. 78	Aug. 78	595.0	100	Dec. 79	Aug. 79	595.0	
Total	2,193	2,193										
Andersen AFB:												
NAVAIDS—ILS	345	345	June 77	Sept. 78	Oct. 78	Dec. 78	252.0	99	Dec. 79			
NAVAIDS—PAR	107	107	Dec. 78	Feb. 79	May 79	May 79	74.0	25	Dec. 79			RD.
Addn to Commissary Warehouse	1,453	1,453	July 77	July 78	May 78	June 78	1,494.0	86	Apr. 80			
Total	1,905	1,905										
SAC total	19,717	17,848										
AFSC												
Arnold EDC:												
Alt Lighting Sys	430	430	Mar. 77	Oct. 77	Feb. 78	Feb. 78	274.0	100	Nov. 78	Dec. 78	276.0	
Waste Heat Recovery	850	850	Mar. 77	Dec. 77	Feb. 78	Feb. 78	743.0	100	Jan. 79	Nov. 78	762.0	
Total	1,280	1,280										
Brooks AFB: Environmental health Lab (total)	550	550	Oct. 76	Oct. 77	Dec. 77	Mar. 78	524.0	100	May 78	Sept. 78	548.9	F.C.
Buckley ANGB: Addn to Aerospace Data Fac (total).	1,100	1,100	Nov. 76	Jan. 77	June 78	June 78	1,113.0	100	Apr. 79	Aug. 79	1,112.7	

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design: Start	Design: Completed	Award estimated Mar. 31, 1980	Construction: Contract award	Construction: Award CWE	Construction: Status Mar. 31, 1980	Beneficial occupancy: Estimated	Beneficial occupancy: Actual	Total project expenditure when completed	Remarks
Edwards AFB:												
Flight Test Mission Control Complex	7,690	7,690	Feb. 77	Feb. 78	June 78	June 78	6,944.0	94	May 80			
AltBEQ	3,280	3,280	June 76	Jan. 78	May 78	May 78	3,227.0	86	Sept. 80			
Library	615	615	Dec. 75	Feb. 78	June 78	June 78	708.0	100	Mar. 79	July 79	666.0	
EMCS	1,236											RP.
Alt Mechanical Sys	546	546	May 76	Mar. 78	June 78	July 78	479.0	100	Apr. 80	Sept. 79	488.0	
Alt Heating Plants	165	165	Jan. 77	Sept. 77	Jan. 78	Feb. 78	151.0	100	Sept. 78	Aug. 78	148.0	
Total	13,532	12,296										
Eglin AFB:												
Extend Taxiway	850	850	July 76	Sept. 77	Dec. 77	Dec. 77	900.0	100	Oct. 78	Dec. 78	901.0	
Flight Simulator Trng Fac	1,016	1,016	May 77	Oct. 77	Nov. 77	Nov. 77	787.0	100	Sept. 78	Dec. 78	873.0	
Acft General Purposes Shop	338	338	July 77	Jan. 78	Feb. 78	Mar. 78	421.0	100	Jan. 79	Dec. 78	422.0	
Alt Acft Maint Docks	1,213	1,213	July 77	Jan. 78	Mar. 78	Mar. 78	1,468.0	100	May 79	July 79	1,516.0	
Weapons Release Sys Shop	535	535	May 77	Dec. 77	Feb. 78	Feb. 78	455.0	100	Feb. 79	Jan. 79	464.0	
Addn to Elec Counter-Measure Maint Fac	438	438	Apr. 77	Nov. 77	Jan. 78	Jan. 78	494.0	100	Oct. 78	Nov. 78	500.0	
Support Equipment Shop	324	324	May 77	Jan. 78	Feb. 78	Mar. 78	395.0	100	Jan. 79	Feb. 79	405.0	
Life Support Sys Fac	1,576	1,576	Feb. 76	Sept. 77	Nov. 77	Dec. 77	915.0	100	Oct. 78	June 79	920.0	
Armament Sys Integration Fac	3,915	3,915	Oct. 76	Oct. 77	Dec. 77	Dec. 77	2,370.0	100	July 79	July 79	2,372.0	
Addn to Explosive Properties Fac	240	240	Oct. 76	Oct. 77	Dec. 77	Dec. 77	292.0	100	Sept. 78	Aug. 78	292.0	
Alt BEQ-Aux 9	1,940	1,940	Aug. 76	Oct. 77	Nov. 77	Nov. 77	2,090.0	100	Apr. 80	Mar. 80	2,130.0	
Security Police OAS Fac-Aux 9	309	309	Oct. 76	Mar. 78	May 78	June 78	346.0	100	Jan. 79	May 79	346.0	
EMCS-Aux 9	544	544	Oct. 76	Apr. 78	Dec. 78	May 79	637.0	20	Aug. 80			RD.
Alt Heating and AC Controls	700	700	June 77	Dec. 79	Mar. 79	Apr. 79	569.0	90	May 80			
Solar Domestic Hot Water	76	76	June 77	Aug. 78	Sept. 78	Sept. 78	93.0	100	Apr. 79	May 79	93.0	
Upgrade Sewage Trmt Sys	1,851	1,851	Feb. 77	Apr. 78	June 78	July 78	2,268.0	100	Dec. 79		2,314.0	
Total	15,865	15,865										
Various Locations: Joint Surveillance System (total).	2,826	2,826	Feb. 77	Aug. 78	Feb. 78	May 78	827.0	20	Aug. 80			Subline item.

Los Angeles AFS: Alt Science Lab (total)	500											
Patrick AFB: Waste Heat Recovery (total)	300	300	Apr. 77	Jan. 78	Mar. 78	Mar. 78	180.0	100	Feb. 79	June 79		RP.
AFSC total	35,953	34,217										
SPECIAL FACILITIES												
Various Locations:												
Special Operations Fac	322	322	Feb. 78	Mar. 79	Aug. 78	Sept. 78	179.0	56	Jan. 81			
Space Track Observation Fac	2,034	2,034	Oct. 76	June 79	July 79	Sept. 79	2,202.0	0	Oct. 80			Subline item.
Special facilities total	2,356	2,356										
TAC												
Bergstrom AFB: EMCS	874	874	Oct. 76	July 78	Feb. 79	May 79	980.0	1	Sept. 80			RD.
Cannon AFB:												
Alt Fuel Sys Maint Fac	329	329	Oct. 76	Aug. 77	Oct. 77	Sept. 78	385.0	100	Apr. 79	July 79		
EMCS	608	608	Sept. 76	Apr. 78	Feb. 79	May 79	540.0	1	July 79			
Total	937	937										
Davis-Monthan AFB: NAVAIDS-ILS (total)	262	262	Aug. 77	Jan. 78	May 78	June 78	132.0	99	Dec. 79			
England AFB:EMCS (total)	585	585	Sept. 76	July 78	Feb. 79	May 79	704.0	4	Aug. 80			
George AFB:												
NAVAIDS-ILS	127	127	Aug. 77	Nov. 77	Feb. 78	Mar. 78	146.0	100	Sept. 78	Sept. 78	149.0	
NAVAIDS-PAR	90											RP.
Range Support Fac	1,548	1,548	Dec. 76	Feb. 79	May 79				May 80			
Elec Countermeasure Maint Fac	1,308	1,308	Feb. 77	Nov. 77	Jan. 78	Feb. 78	1,047.0	100	Jan. 79	Mar. 79	1,071.0	
Total	3,073	2,983										
Holloman AFB:												
Arm and Disarm Pads	664	664	Feb. 77	Aug. 77	Oct. 77	Dec. 77	830.0	100	Oct. 78	Sept. 78	805.0	
NAVAIDS-ILS	128	128	Sept. 77	June 78	June 78	Oct. 78	152.0	100	Oct. 79	Oct. 79		
Officer Quarters	1,585	1,585	Feb. 77	Oct. 77	Dec. 77	Feb. 78	2,107.0	100	Feb. 79	Apr. 79		
Total	2,377	2,377										
Homestead AFB: NAVAIDS-PAR (total)	90											RP.

See footnotes at end of table.

MILCON PROJECT STATUS REPORT, AIR FORCE—Continued

[Dollar amounts in thousands]

Location/description	Authorized	Appropriated	Design		Award estimated Mar. 31, 1980	Construction			Beneficial occupancy		Total project expenditure when completed	Remarks
			Start	Completed		Contract award	Award CWE	Status Mar. 31, 1980	Estimated	Actual		
Langley AFB:												
Addn to Data Processing Fac	3,488	3,488	Dec. 75	Oct. 77	Nov. 77	Nov. 77	2,778.0	86	July 80			
EMCS	1,101											RP.
Alt Base Heating Sys	161	161	Feb. 77	Oct. 77	Dec. 77	Dec. 77	239.0	100	Dec. 78		68.0	
Industrial Waste Trmt	452	452	Sept. 76	Sept. 77	Oct. 77	Oct. 77	298.0	100	Aug. 78			
Total	5,202	4,101										
Luke AFB:												
Replace Runway	4,983	4,983	May 76	Jan. 77	Mar. 78	Mar. 78	4,101.0	100	Jan. 79	Mar. 79	4,812.0	
NAVAIDS–ILS	115	115	Aug. 77	Oct. 77	Mar. 78	Mar. 78	102.0	100	Nov. 78	Nov. 78	102.0	
Alt BEQ	2,200	2,200	July 77	Apr. 78	July 78	July 78	2,506.0	86	Nov. 80			
BEQ/Dining Hall	1,559	1,559	Sept. 76	July 77	July 78	Sept. 78	2,153.0	91	May 80			
Water Trmt and Dist Sys	385	385	Jan. 77	June 77	Oct. 77	Jan. 78	462.0	100	Sept. 78	Oct. 78	478.0	
Total	9,242	9,242										
MacDill AFB:												
Acft Corrosion Control Fac	1,411	1,411	Oct. 76	Jan. 78	Mar. 78	Mar. 78	1,416.0	100	Mar. 79	June 79	1,417.0	
EMCS	1,009	1,009	Oct. 76	July 78	Feb. 79							
Total	2,420	2,420										
Moody AFB:												
Addn to Acft Ops Parking Apron	1,887	1,000										RP
Field Trng Fac	871	581	Feb. 77	Feb. 78	Apr. 78	May 78	498.0	100	Mar. 79	July 79	507.0	
Small Acft Maint Dock	1,928											RP.
Acft Fuel Sys Maint Fac	810	810	Jan. 77	Dec. 77	Feb. 78	Apr. 78	995.0	100	June 79	Sept. 79	997.0	
Total	5,496	2,391										
Mountain Home AFB: Fire Protection Avionics Shop (total)	195	195	Aug. 77	Dec. 77	Apr. 78	May 78	131.0	100	Jan. 79	Jan. 79	172.0	
Myrtle Beach AFB: EMCS (total)	718	718	Nov. 76	July 78	Dec. 78	May 79	877.0	11	Jan. 80			

Nellis AFB:												
Alt BEQ	2,300	2,300	Oct. 77	Feb. 78	June 78	Aug. 78	2,456.0	64	Apr. 80			
Officer Quarters	2,880	2,880	Sept. 77	Apr. 78	May 79	June 79	3,498.0	75	Sept. 80			BR.
Total	5,180	5,180										
Seymour Johnson AFB:												
Squadron Flight Ops Fac	1,503	1,503	Oct. 76	July 77	Oct. 77	Oct. 77	1,467.0	100	Feb. 79	Apr. 79	1,498.0	
Acft Maint Shop	1,410	1,410	Oct. 76	July 77	Oct. 77	Oct. 77	1,022.0	100	Mar. 79	Feb. 79	1,047.0	
Acft Maint Control Fac	503	503	Oct. 76	Nov. 77	Dec. 77	Dec. 77	811.0	100	Feb. 79	Apr. 79	815.0	
Total	3,816	3,816										
Shaw AFB:												
NAVAIDS-ILS	117	117	Apr. 77	Jan. 78	Dec. 77	Dec. 77	143.0	99	July 78	Sept. 78	154.0	
EMCS	646	646	Oct. 76	Apr. 78	Feb. 79							RD.
Total	763	763										
TAC total	41,230	36,844										
USAFSS												
Misawa AB: Alt Sewage Trmt Plant (USAFSS total).	732	732	Feb. 77	Oct. 77	Jan. 78	Aug. 78	775.0	100	Aug. 79	Oct. 79		
NUCLEAR WEAPONS SECURITY IMPROVEMENTS												
Various Locations:												
Inside the U.S	44,298	44,298	Jan. 77	May 79	Dec. 77	Dec. 77	30,317.0	85	Oct. 80			(12).
Outside the U.S	10,162	10,162	Oct. 77	Aug. 78	May 78	May 78	4,175.0	41	Apr. 81			(13).
Nuclear weapons security improvements total.	54,460	54,460										
Fiscal year 1978 total	419,152	385,425										

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[1] Project deferred due to $240,000,000 shortfall problem.

[2] Project deferred due STS reprograming requirement.

[3] Project was initially on list of source of funds for STS reprograming and subsequently removed; award schedule being reestablished.

[4] Line item contains several projects, progress represents partial award and proportionate progress.

[5] Authorized by sec. 407 (damaged facilities) 10 USC 2673.

[6] Flow meters installed to record discharge rate. If discharge "minor" no further work will be required.

[7] Project on hold awaiting final decision on regional system participation. To date EPA has been unable to establish regional system. Project authority extended by fiscal year 1980 authorization bill.

[8] $20,000,000 reallocated to NATO for U.S. share.

[9] Amendment No. 4 dated June 26, 1979 canceled invitation for bid.

[10] PA reduced to provide savings.

[11] Connection charge only, no construction.

[12] Contract CWE reflects subline items awarded as of Sept. 30, 1979. Design, contract award, and beneficial occupancy dates reflect average of all subline items. Construction status indicates an average of subline items awarded.

[13] Includes $2,000,000 reallocated to NATO for U.S. mission fund.

Note: Scheduled award dates for projects under design are as of Mar. 31, 1980.

Question. Last year, you reported that your construction backlog was growing in constant dollar terms. Update your charts and discussions from last year's testimony.

Answer. The military construction backlog has varied over the past eight years from about $6.9 billion to the current figure of $29.0 billion. The large surge in backlog from 1980 to 1981 is due to a $21.6 billion backlog for M–X construction. Last year's figure did include minimum M–X requirements but the full extent of construction was not identified until this year. The military construction backlog, as reported below, reflects the funds needed to replace and modernize obsolete facilities, alleviate space shortages and support new mission requirements.

	Backlog in current fiscal year dollars	Backlog in constant 1981 dollars
Fiscal year:		
1974	6.9	11.9
1975	6.9	10.0
1976	7.0	10.0
1977	5.5	7.7
1978	5.6	7.3
1979	9.1	10.0
1980	9.7	10.6
1981	29.0	29.0

Question. Similarly update your testimony and charts from last year's transcript regarding construction expenditures.

Answer. The Air Force annual authorizations, adjusted for ICBM and space related major construction, have been primarily in the $500 to $800 million range in constant 1981 dollars. While this level has provided minimum support for new weapons systems, research and development and some support construction, it has not been adequate to reduce the facilities backlog. The history follows:

AIR FORCE AUTHORIZATIONS, FISCAL YEARS 1963–80

[In millions]

	Current dollars	Constant 1981 dollars
Fiscal year:		
1963	[1] (536) 743	[1] (1,763) 2,444
1964	[1] (183) 488	[1] (594) 1,584
1965	[1] (93) 303	[1] (293) 956
1966	[1] (49) 334	[1] (149) 1,018
1967	[1] (56) 198	[1] (165) 582
1968	[1] (19) 422	[1] (53) 1,185
1969	[1] (24) 210	[1] (63) 550
1970	[1] (6) 269	[1] (15) 650
1971	256	568
1972	247	514
1973	284	557
1974	260	448
1975	391	567
1976	486	693
1977	[2] (437) 736	[2] (616) 1,037
1978	421	549
1979	[3] 523	[3] 622
1980	[3] 543	[3] 592

[1] ICBM and space launch construction.
[2] Aero propulsion system test facility.
[3] Figures reflect authorization levels.

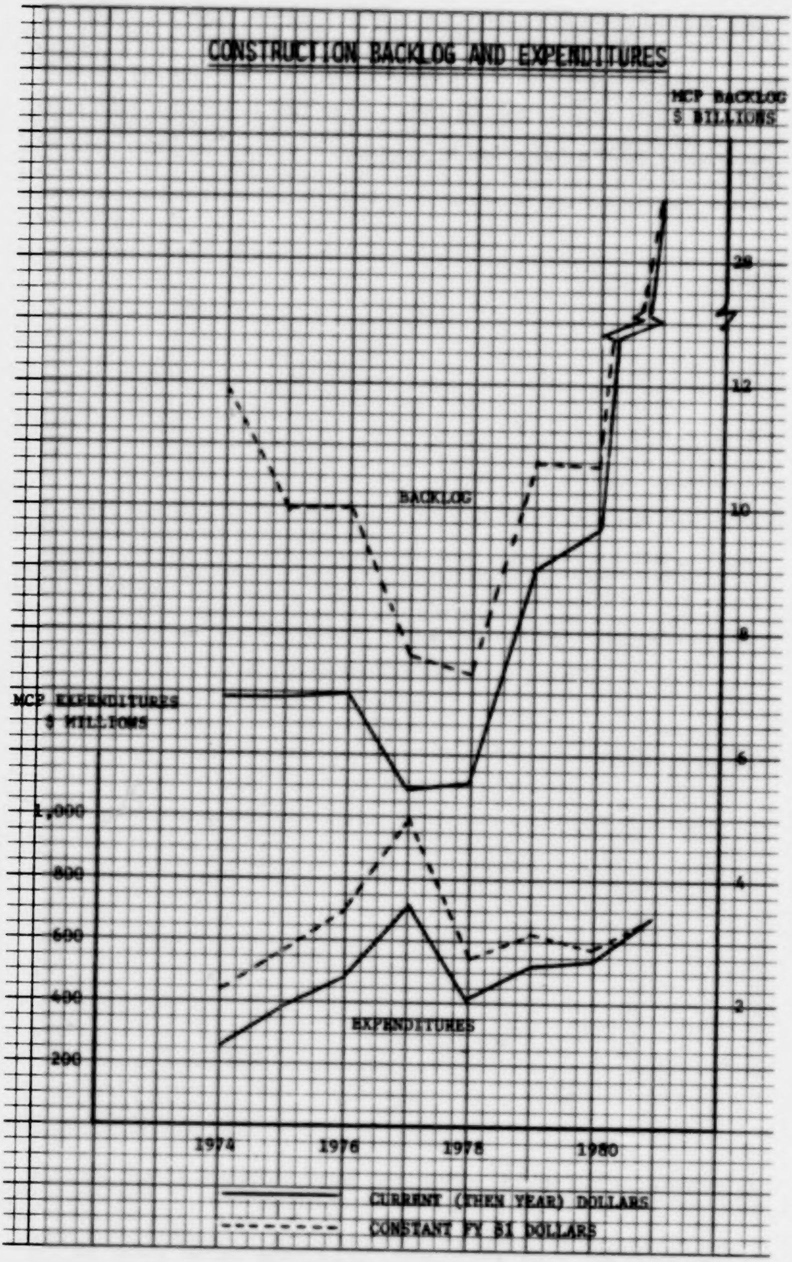
Question. Provide a graph showing construction backlog and construction expenditures, both in constant and then-year dollars, identifying and discussing any anomalies.

Answer. Major anomalies are footnoted on the graph and described below.

(1) As shown on the construction expenditures chart, the fiscal year 77 surge was due to the $437M authorization for the Aero Propulsion Test Facility at Arnold Engineering Test Facility, Tenn.

(2) In fiscal years 77/78 there was a DOD emphasis to reduce the backlog. As a result, the backlog was revised to include only figures from from the Five Year Defense Plan (FYDP). In fiscal year 79 the FYDP figures were determined as not being representative of our true backlog Since then, the Air Force has reported its total backlog.

(3) The large surge in backlog from 1980 to 1981 is due to a $21.6 billion backlog for M-X construction. Last year's figure did include minimum M-X requirements but the full extent of construction was not identified until this year.


CONSTRUCTION BACKLOG AND EXPENDITURES
MCP BACKLOG
$ BILLIONS
20
12
10
8
6
4
2
BACKLOG
MCP EXPENDITURES
$ MILLIONS
1,000
800
600
400
200
EXPENDITURES
1974
1976
1978
1980
CURRENT (THEN YEAR) DOLLARS
CONSTANT FY 81 DOLLARS

ENERGY

Solar

Question. Your program is conspicuous by its lack of solar projects. The Navy and the Army have 66 solar projects (excluding family housing). Why does Air Force have none?

Answer. The rationale for the Air Force's approach to solar project program development is to ensure ourselves of cost-effective candidate projects before programming and initiating design. Our program started with numerous candidates, and because of various analyses, we are down to 28 candidates in fiscal year 1981. If these candidates are cost-effective, then our plan is to bring eligible projects on line through reprogramming actions. We simply were not sure, at the time of program submission, which project would prove to be cost effective. Currently, we are evaluating proposed projects and should have a firm list by the end of April.

Identify the 28 Solar Projects?

BASE AND PROJECT

Beale AFB, CA.—Audio Visual Services Center.
Brooks, AFB, TX.—Alter Unaccompanied Enlisted Personnel Housing.
Hanscom AFB, Mass.—Dispensary/Dental Clinic.
Kelly AFB, TX.—Sanitary Latrines.
McClellan AFB, CA.—Fire Station.
Norton AFB, CA.—Fire Station.
Randolph AFB, TX.—Unaccompanied Enlisted Personnel Housing.
Robins AFB, GA.—Personnel Services Center.
Scott AFB, IL.—Dental Clinic.
Wurtsmith AFB, MI.—Flight Simulator Training Facility.
Blytheville AFB, AR.—Unaccompanied Enlisted Personnel Housing.
Blytheville AFB, AR.—Security Police Operations Facility.
Camp New Amsterdam, NE.—Gymnasium.
Grand Forks, AFB, ND.—Flight Simulator Training Facility.
Griffis AFB, NY.—Religious Education Facility.
Incirlik AB, TK.—Unaccompanied Enlisted Personnel Housing.
Kirtland AFB, NM.—Fuel System Maintenance Dock.
Kunsan AB, KO.—Unaccompanied Enlisted Personnel Housing.
Lackland AFB, TX.—Marksmanship Training.
RAF Lakenheath, UK.—Control Tower.
Langley AFB, VA.—Alter Unaccompanied Enlisted Personnel Housing.
Pope AFB, NC.—Dental Clinic.
Pope AFB, NC.—Alter Unaccompanied Enlisted Personnel Housing.
Robins AFB, GA.—Aircraft Final Assembly/Checkout Facility.
Seymour-Johnson AFB, NC.—Small Aircraft Maintenance Dock (Auth FY 80).
Tinker AFB, OK.—Addition to Avionics Integrated Support Facility.
Tyndall AFB, FL.—Munitions Maintenance Facility.
RAF Woodbridge, UK.—Avionics Shop.

Question. Have you complied with Section 804 of the fiscal year 1979 and fiscal year 1980 Acts?

Answer. Yes—Since enactment of Section 804 in late 1978, the AF has evaluated numerous fiscal year 1980 and 1981 MCP projects for solar systems. Where cost-effective systems are determined, the installation will be through internal reprogramming actions or, if necessary, via the cost variation process.

Question. Apparently you have not found any projects where solar systems are cost-effective. Provide for the record those projects for which you examine solar feasibility and show why you did not pursue a solar system.

Answer. The following list of fiscal year 1981 MCP projects were examined for solar applications and determined impractical and/or uneconomical due to insufficient building thermal loads. available excess heat or just simply would not amortize.

LOCATION AND PROJECT DESCRIPTION

Kunsan AB, Korea.—Unaccompanied Enlisted Personnel Housing.
Beale AFB, CA.—Training and Operational Facility.
Castle AFB, CA.—Add to and Alter Consolidated Medical Facility.
Edwards AFB, CA.—Integration Facility for Avionics Systems Testing.

McChord AFB, WA.—Data Processing Facility.
McChord AFB, WA.—Flight Simulator Training Facility.
Nellis AFB, NV.—RAPCON Support Facility.
Nellis AFB, NV.—Alter ECM POD Maintenance Shop.
Dover AFB, DE.—Library.
Pope AFB, NC.—Consolidated Base Personnel Office.
Pope AFB, NC.—Flight Simulator Training Facility.
MacDill AFB, FL.—Data Processing Facility.
Whiteman AFB, MO.—Base Engineer Facility.
Grand Forks AFB, ND.—Data Processing Facility.
Minot AFB, ND.—Data Processing Facility.
F.E. Warren AFB, WY.—Data Processing Facility.
Johnson Space Center.—Operations Center.
Andrews AFB, MD.—Ready Crew Facility.

Question. What is your opinion of Section 804 of last year's bill as it has been implemented?

Answer. The intent of Section 804, P.L. 96–125, is good; however, high solar costs are still major impediments to the economic justifications of solar systems.

Question. Provide for the record a copy of your instructions to the field implementing Section 804.

Answer. A copy of our instructions implementing Section 804 is as follows:

"Excerpt from Design Instructions issued to the field on 27 October 1978."

Facility solar energy guidance for military facilities (other than family housing). Section 804 of Military Construction Authorization Act, 1979, Public Law 95–356 requires that 25 percentum, based on the estimated dollar value of the construction cost of all new facilities except Family Housing that are placed under design shall include Solar Energy Systems to the extent that engineering analysis demonstrate cost effectiveness. The law requires that these provisions are effective ninety days after the date of the enactment of the act. The law was enacted 8 September 1978; therefore, all design starts (A–E award) on or after 7 December 1978 are subject to these requirements. HQ USAF/LEEE will indicate in the design directives which projects are to be evaluated for solar application. The parameters for accomplishing the required engineering analyses are as follows:

a. Reference Documents: The applicable portions of HUD Intermediate Minimum Property Standards for Solar Heating and Domestic Hot Water systems (1977 edition) shall be used as a guide in making the required technical analyses.

b. Systems to be Analyzed. Space heating and domestic water heating, space heating only and water heating only. Because of today's state of technology, solar cooling systems should not be considered for facilities with a total air conditioning load of less than 40 tons unless prior approval is obtained from HQ USAF/LEEE.

c. System Performance Parameters. In making the required analyses, solar systems should be targeted to provide a minimum of 25 percent of the required space heating and 35 percent of the domestic water heating (year around basis).

d. Weather Data. Site specific solar radiation and other weather data of the Departments' authorized weather service shall be used in making the required engineering analyses.

e. Determining Cost Effectiveness. Only the initial cost of the system is to be considered in determining cost effectiveness (exclude any maintenance or replacement cost). Initial costs to be recovered over the expected life of the facility.

ANNUAL ENERGY ESCALATION RATES

[In percent]

	Fiscal year—		
	1979–80	1981–83	1984 and beyond
Fuel	16	14	8
Natural gas and LPG	15	14	8
Electricity	15	13	7

f. Architectural Compatibility. Whether site mounted or building mounted, systems shall be designed to be architecturally compatible with the total environment.

g. Project Funding Submission. Each construction project incorporating a solar energy system shall clearly show the type of functional purpose of the system and its cost including installation. If more than one system is involved in a single project, the type and cost of each shall be displayed separately.

Upon completion of the required analyses, a summary of findings shall be furnished to HQ USAF/LEEE prior to initiating final design.

Question. Do you agree with the life cycle costing procedures for solar systems as promulgated by DOD or do you feel there should be some changes?

Answer. We agree with the methodology used by DOD for analyzing the life cycle costs of solar systems. Certain parameters used however, e.g., 25 year facility life of the annual fuel escalation rates, need re-evaluating.

ENERGY MONITORING AND CONTROL SYSTEMS (EMCS)

Question. The Air Force pioneered the use of EMCS in the DOD. Discuss your program in general terms to include the energy savings being realized.

Answer. The Air Force has an active energy conservation program and an important part of this program is the application of energy monitoring and control Systems. EMCSs make up about 25 percent of our ECIP. The Table below shows the size of our EMCS program and the estimated energy savings that will be realized when the systems are operational. The Air Force has 12 operational EMCS systems, 38 installations with systems under construction, and 23 installations with systems under design.

	Cost (thousands)	Estimated savings (million Btu per year)
Fiscal year:		
1976	$11,600	751,000
1977	12,100	917,000
1978	12,900	947,000
1979	22,100	1,298,000
1980	5,900	339,000
1981	19,200	1,305,000

Documented energy savings are not readily available since metering on our bases is extremely limited and EMCS is just one energy savings project that a typical base would have. We used an outside engineering firm at Luke AFB to determine our savings. They found the savings were 62,300 MBTU/YR and we reduced the energy consumed by heating and air condition systems by up to 30 percent. We plan to continue our efforts to document the energy savings being realized by the use of EMCS.

HOT WATER HEAT PUMPS

Question. In an article in the February 1980 *Engineering & Services Quarterly*, Air Force Captain John L. Heiser reports on a domestic hot water heat pump that saves over half the energy needed to heat domestic hot water. What is the potential for applying this technique DOD-wide and are you pursuing it?

Answer. We believe that hot water heat pumps have potential and are currently evaluating these economic and engineering implications. We will be issuing guidance to Air Force field engineers in the near future and will share our experiences and conclusions with the remainder of DOD.

Additional information/clarification requested: What is Air Force doing? What is the schedule? What are the potential savings?

Additional information/clarification follows: The Air Force has substantially completed its analysis of using a heat pump for heating domestic hot water. The best application is in a tropical region such as Hawaii or the Philippines where the cold air waste from the heat pump can be used for air conditioning. Other more marginal applications are in the South where the water heater is in an unheated basement or garage. It cannot be used in a small utility room, because the room temperature would be lowered too much.

In most of the United States the benefit of heat pump water heating is marginal. The E/C (energy to cost ratio) ranges from 19 to 30; the average E/C of our energy projects in fiscal year 1982 is 49. The B/C (benefit to cost ratio) is slightly over 1.0; our fiscal year 1982 average is 3.3. In an unheated garage in the southern United States, with the Air Force average of 3.5 people living in the house, there would be a savings of 1,830 KWH per year. At the average Air Force Base rate of 3¢ per KWH, there would be an annual savings of $55. The installation cost is about $750. This gives a payback of about 13.5 years.

We are preparing data on our fundings for our bases. Each base can then determine if there is an application at that base.

GENERAL

Question. Review your program in the areas of:

a. Conversion of power plants to coal.

b. Use of refuse derived fuel.

c. Use of geothermal power.

d. Use of biomass fuel.

Answer. a. Our program is directed at converting oil/gas fired central heating plants to coal. The F. E. Warren AFB, Wyoming plant was funded in fiscal year 1979 and Fairchild AFB, Washington is in the fiscal year 1981 program. Eleven other plants are under preliminary design and will be submitted in our fiscal year 1982 and beyond programs.

b. Wright-Patterson AFB, Ohio is burning refuse derived fuel (RDF) mixed with coal. We are using this project to develop criteria and gain experience with RDF. The potential of using RDF as a fuel will be considered for future coal conversion projects.

Additional information requested: Expand on Wright-Patterson AFB, Ohio (refuse derived fuel). Cost? Supplier? Experiences on boilers and emissions.

Additional information follows: The manufacturer of RDF is Teledyne of Cockeysville, Md. The cost is $27.00 per ton. Shipping by truck costs $55.26 per ton, for a total cost of $82.26 per ton, or $6.35 per MBTU. We tried shipping by rail, which is much cheaper, but the rail handling pulverized the rather fragile pellets. The RDF is mixed half and half with coal, which this year is costing $1.77 per MBTU. We obviously consider our benefit to be technological, rather than economical.

We have had minor slagging and clinker formation problems with RDF, but believe we can overcome these problems with experience.

Environmentally, our sulfur oxides are down forty to fifty percent using half RDF as compared to using only coal. Our particulate emissions remain about the same.

c. We are pursuing the use of geothermal at several locations. At Williams AFB, Ariz., we are progressing towards commercial development of a geothermal-powered electrical power plant or a central cooling plant. Recent discussions with DOE have also resulted in planned resource identification studies for Dover AFB, Del., and Charleston AFB, S.C. We are also looking at a geothermal source at Hill AFB, Utah, but we are unsure that it is commercially exploitable with current technology.

d. We burned wood pellets at Kingsley Field, Oreg., until February 1, 1980. As part of base closure actions, the local municipality took over operation of the heating plant. They are continuing to burn wood pellets as the primary fuel. We are considering the economics of using processed wood as a fuel at Loring AFB, Maine, as part of a fiscal year 1982 project to convert three oil fired boilers. The potential of using processed wood as a fuel will be considered for future coal conversion projects.

SPACE SHUTTLE

Question. Your record in estimating costs for the space shuttle construction has not been good. Provide for the record a project listing showing original estimates (fiscal year 1979 budget), and each subsequent reestimate (fiscal year 1980 budget, fiscal year 1981 budget, and current). Include program totals and indicate program year for each project.

Answer. The listing is attached. The $328 million fiscal year 1980 program submitted to the Congress contained funds for accommodating thrust augmentation in the launch pad, but not for full implementation of thrust augmentation since a reliable estimate of that cost was not available. The fiscal year 1981 program was adjusted to include implementation of thrust augmentation as well as the Cape Canaveral security measures/spacecraft integration facility project which was validated as a requirement in mid-1979. The current program includes bids received to date. With the exception of the launch complex, contract bids have been under the estimated amount.

FISCAL YEAR 1979 PROGRAM

Fiscal year and project	*Millions*
1979:	
Payload processing facility	$8.8
Airfield facility	32.1
Launch complex	104.7
Subtotal	145.6
1980: STS facilities	107.0
Total	252.6

FISCAL YEAR 1980 PROGRAM

1979:	
Payload processing facility	8.8
Launch complex	104.7
Subtotal	113.5
1980:	
Orbiter processing facility	43.0
Solid rocket booster facility	3.2
Thrust augmentation	13.5
Support facilities	6.1
Operations center	12.4
Subtotal	78.2
1981: Airfield, SRB refurbishment and subassembly, transportation, logistics, IOSC, SAMTO HQ, ext. tank storage and C/O, SRB retrieval and disassembly	104.7
1982: Harbor modification, parachute refurbishment, flight crew facilities	14.3
1983: Safing and desafing, hypergol maintenance and C/O	17.2
Total	327.9

FISCAL YEAR 1981 PROGRAM

1979:	
Payload processing facility	8.8
Launch complex	104.7
Subtotal	113.5
1980:	
Orbiter processing facility	43.0
Solid rocket booster facility	3.2
Thrust augmentation	13.5
Support facilities	6.1
Operations center	8.9
Subtotal	74.7
1981:	
Logistics/support facility	25.8
Airfield facilities	29.9
Solid rocket booster/external tank facilities	32.4
Solid rocket booster disassembly facility	16.7
Spacecraft integration/security measures	22.3
Subtotal	127.1

1982: Harbor modification, parachute refurbishment, flight crew facilities	14.3
1983: Safing and desafing, hypergol maintenance and C/O, thrust augmentation	36.2
Total	365.8

CURRENT PROGRAM

1979:	
Payload processing facility	6.0
Launch complex	187.1
Subtotal	193.1
1980:	
Orbiter processing facility	43.0
Solid rocket booster facility	2.9
Thrust augmentation	13.5
Support facilities	6.1
Operations center	8.9
Subtotal	74.4
1981:	
Logistics/support facility	25.8
Airfield facilities	29.9
Solid rocket booster/external tank facilities	32.4
Solid rocket booster disassembly facility	16.7
Spacecraft integration/security measures	22.3
Subtotal	127.1
1982: Harbor modification, parachute refurbishment, flight crew facilities	14.3
1983: Safing and desafing, hypergol maintenance and C/O, thrust augmentation	36.2
Total	445.1

SPACE SHUTTLE

Question. Explain why the cost has gone from about $250 million to over $444 million.

Answer. The reasons for a cost growth from $250 million in the fiscal year 1979 budget to approximately $327 million in the fiscal year 1980 budget were explained in the fiscal year 1980 hearing (extract attached). The increase was attributed to improved requirements definition, inflation and escalation associated with an expanded construction program, and new requirements. The current estimate of over $444 million includes an additional $82 million for the Vandenberg Launch Complex as well as funds for full implementation of thrust augmentation at Vandenberg and security measures/spacecraft integration facility at Cape Canaveral. As previously explained, the total cost of thrust augmentation and the need of the security measures/spacecraft integration facility were under study when the fiscal year 1980 program was submitted to the Congress.

Question. Explain these serious cost overruns.

Answer. The cost overrun has occurred only in the fiscal year 1979 STS project. The project was divided into four construction packages in order to accommodate the design and construction schedule. The first package consisted primarily of demolition on the existing Space Launch Complex 6 (SLC-6) in advance of the new construction to accommodate the Space Shuttle. The demolition is 100% complete. The majority of the remainder of the new construction is contained in Package II, for which five bids were received on January 31, 1980. The CWE based on low bid received is $128.0 million which exceeds the programmed amount for the entire line item. Package IV, the launch control center, was opened on March 5, 1980. The CWE based on low bid received is $7.0 million.

When coupled with the CWE's for Package I (completed) and Package III (ready to advertise), the total CWE of $200.6 million exceeds the station total authorization by 52 percent and the line item authorization by 70 percent. In order to assure a complete and useable facility, it is necessary to seek cost variation authority prior to awarding Packages II and IV and advertising Package III.

An analysis of the bids indicated that this construction package contains several unique and one-of-a-kind structures for which past construction experience upon which to base a bid price is not available. Additionally, the work is confined to the relatively small area of the launch complex, thereby, magnifying normal management and subcontract scheduling activities and costs. These considerations caused the bidders to increase normal overhead and contingency estimates. Economic uncertainty also drove up the cost. Inflation affected the projected cost of materials across the board, but caused a particularly large increase in electrical and mechanical equipment. It should also be noted that current labor contracts expire in the summer of 1980. New negotiations are expected to result in *subsistence allowance for the skilled crafts* imported to the area. The local area has a small skilled labor pool and most labor as well as materials and equipment will be imported from the major metropolitan areas in California. Furthermore, a large Liquid Natural Gas (LNG) commercial processing facility is being planned for construction start in late 1980 or early 1981. The bid for construction Package II preceded other follow-on STS and M-X work, but known future projects and the knowledge that construction for the commercial LNG facility is planned may have been a factor in bids.

Question. The situation with respect to your fiscal year 1980 STS program is especially serious. I understand you are at least $80 million underfunded. Provide details on that situation. Discuss the options for solving your underfunding problem and indicate how you intend to proceed.

Answer. The fiscal year 1979 STS program has experienced a significant funding shortage ($82.4 million), and the cost variation request and reprogramming requirements have been forwarded to the Congressional committees. The fiscal year 1980 STS program current working estimates are within the programmed amount. The construction contract for Phase 1 of the Orbiter Maintenance and Checkout Facility was awarded well within the programmed funding, and the remainder of the fiscal year 1980 STS projects are either awarded or nearing IFB. All indications are that the fiscal year 1980 STS funding is adequate, although we have some concern about Phase II of the Orbiter Maintenance and Checkout Facility since it contains high-precision work platforms similar to those which are in the launch pad. This uncertainty will be resolved shortly when the OMCF Phase II bids are opened.

M-X

Question. Do you intend to pursue legislation to "streamline" the environment and real estate acquisition procedures that will be involved with M-X construction?

Do we intend to pursue special legislation?

Answer. The Air Force does not favor legislation at this time. The Air Force has been working closely with the Bureau of Land Management to coordinate our efforts and reduce the normal time for evaluation and processing of a land withdrawal application. The Air Force anticipates that withdrawal legislation, as needed, would be submitted in early 1981 and would be passed by Congress that year.

Question. When will a final decision be made on the basing mode?

Answer. The President has already made the decision to enter full scale engineering development of the M-X missile deployed in a horizontal multiple protective structure basing mode. This decision was made in September, 1979. The fiscal year 1981 funding request now being considered by the Congress asks for funds to continue the full scale engineering development of the M-X. At the same time, the Air Force is abiding by the Stevens' Amendment to the fiscal year 1980 Defense Appropriations Bill which requires the Air Force to not expend fiscal year 1980 funds in a manner which would commit the United States to one basing mode. However, the Air Force is proceeding as directed by the President and will conduct a System Design Review (SDR) of the M-X system in July 1980. This milestone establishes the baseline for the system required to support the July 1983 production decision and July 1986 initial operational capability.

After the SDR, a significant change to the baseline could cause schedule and funding impacts.

Question. Do you intend to pursue legislation to "streamline" the environmental and real estate acquisition procedures that will be involved with M-X construction?

Answer. Special legislation has been considered which would expedite the siting, construction and operation of the M-X mobile missile, and the achievement of an initial operational capability by 1986. The Air Force is considering legislation which would streamline the procedural portion of the environmental and land withdrawal process without changing the substance of the laws. However, our indication from BLM is that this legislation may not be required to meet the IOC.

Question. When do you need to program construction funds to meet the 1986 IOC?

Answer. The first construction funds for the operational system will be requested in fiscal year 1982. The fiscal year 1982 program will include roads and utilities, a technical support building, a remote surveillance site, and two protective structures for the operational base test site; roads and utilities for the designated assembly area; and some contractor support facilities.

The fiscal year 1982 program will also include two protective structures at Vandenberg for integrated flight testing of the M-X missile.

Question. Have there been any changes to the estimates for construction cost that were provided in our October 1979 hearings? If not, reinsert those figures at this point. If so, please provide any new estimates together with the previous estimates for comparison purposes.

Answer. The following funding profile was provided in October 1979:

[In then year dollars, millions]

	Fiscal year—										
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Total
Construction	62.4	24.6	366.9	2,461.2	2,405.7	4,117.1	4,883.1	4,059.9	1,265.7	373.5	20,002.1
Design	18.7	104.3	124.5	191.0	246.4	229.3	119.3	45.3	9.7	1.2	1,089.7

Our current cost estimate for construction and design reflects minor program adjustments and updated escalation indices:

	Fiscal year—										
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Total
Construction	62.4	17.1	372.7	2,512.7	2,468.0	4,248.4	5,069.3	4,238.7	1,329.0	394.4	20,712.7
Design	18.7	97.0	124.5	191.0	246.4	229.3	119.3	45.3	9.7	1.2	1,082.4

Additional information/clarification requested: Haven't these costs gone down?

Clarification follows: Not yet. However, a design evolution of the horizontal shelter baseline may allow us to save approximately $2 billion. This evolution is called horizontal loading dock and provides substantially more mobility (therefore survivability) than the vertical system, but does not allow the M-X to "dash" from shelter to shelter as does the current baseline system. Approximately 90 percent of the potential savings is attributed to smaller shelters which will cost less to construct.

The two funding profiles submitted, October 1979 and April 1980, both describe the funding requirements for the baseline horizontal dash system. If the horizontal loading dock concept is adopted by DOD, the construction requirements will be studied in more detail and costs adjusted if appropriate.

Question. How many bases do you plan to build to support the MX System? Why?

Answer. In order to reduce travel time and span of control problems we are planning for two support bases.

PROJECTS-GENERAL

Question. Is every project in your request under design? (If not, provide a list of those projects not under design, give the design start and completion dates, and explain the delay.)

Answer. All projects in the 81 MCP are in varying stages of design. Most are well along, except for four projects at Loring AFB, Maine, and one overseas at an unannounced location.

These five projects have minimal design but are estimated to be design complete between October 1980 and February 1981.

The Loring projects were placed in the 81 MCP late in the year; the delay of the overseas project would be best discussed in Executive Session.

Question. What rates of inflation have you used in estimating the costs of projects in your request? Provide an example showing how inflation is factored into your estimates.

Answer. The rates of inflation used by the Air Force to develop the fiscal year 1981 MCP cost estimates are prescribed by OMB and OSD directives. They are as follows:

Calendar year 1979—9.1 percent per year
Calendar year 1980—8.9 percent per year
Calendar year 1981—7.9 percent per year
Calendar year 1982—6.3 percent per year

The inflation is included in the A–E's 35 percent current working estimate (CWE) to project cost growth to the estimated mid point of construction and in accordance with the above directed inflation rates. For example, an A–E submits his CWE based on October 1, 1979 construction costs. Assume this CWE to be for a $4 million fiscal year 1981 MCP project having a bid award date of April 1, 1981 and taking 12 months to construct. The project must be inflated from the date of the CWE (October 1, 1979) to the mid point of construction (October 1, 1981). The calculations are as follows:

October 1979–December 1979 = 1.027 (eg ¼ of calendar year 1979)
January 1980–December 1980 = 1.089 (eg all of calendar year 1980)
January 1981–October 1981 = 1.059 (eg ¾ of calendar year 1981)

$4,000,000 (1.027 × 1.089 × 1.059) = $4,737,600 or rounded to $4,750,000, the requested amount.

Additional information/clarification requested: The rates of inflation used by the Air Force in estimating the costs of projects in your request appear to be lower than those used by the Army and the Navy. These rates are as follows:

[In percent]

	Air Force	Army
Fiscal year:		
1979	9.6	9.6
1980	9.0	9.2
1981	8.0	8.3
1982	6.3	7.6
1983	6.0	7.2
1984	6.0	6.6

Please explain the reason for your lower rates.

Answer: Our review of the rates used by the Army vs AF in estimating the program does not suggest any significant difference. By way of clarification, the rates included in our original answer were for calendar year vs the Army's Fiscal Year input. The above fiscal year figures are therefore directly comparable. Upon inspection, the differences are very small since the only three years for which fiscal year 1981 MCP escalation is used are fiscal year 1979, 80, and 81; fiscal year 1979 is equal, and the Air Force combination of fiscal year 1980/81 rates is lower by only .3 percent for the period covered up to typical bid opening of April 1, 1981. This shortfall equates to only $3000 on a $1,000,000 project cost, which as a divergence is substantially within the rounding procedure prescribed by the Congress. For example, in our response to the original question we showed how inflation is factored into an estimate. Our project cost, using our shortfall figures, came to $4,737,600 or rounded to $4,750,000. That same example, using the higher rates would come to $4,752,000 or rounded to the identical $4,750,000.

Other intangible construction related factors are of more concern to us in our cost estimates. For example, it is almost impossible to forecast for 1½ years how the bidding can impact our requested amounts; bid saturation could easily account for a 15-20 percent cost divergence. In addition, area cost factors are identified by states; a specific location within that state could affect a project cost by 1-20 percent.

Question. Provide a list of projects in this request that were previously requested and failed authorization. State the reason the project was not authorized.

Answer. There is only one project in this request that failed authorization. The Blytheville AICUZ project was added by the Senate Armed Services and Appropriations committees during the deliberations for the 78 MCP. There were, however, no comments by the House or Conference Committees on the project and it was neither authorized nor appropriated.

Question. Provide a list of projects in this request that were previously authorized, but for some reason were never built. State the reason the project was not built.

Answer. The listing follows:

Base and item	Cost (thousands)	Year authorized	Denial committee
Robins AFB, Ga.: Personnel services center	[1] $4,500	1980	HAC
Wright Patterson AFB, Ohio: Energy conservation investment program	[1] 1,080	1980	HAC
Pope AFB, N.C.: Hydrant fueling system	[1] 6,750	1980	HAC
Vandenberg AFB, Calif.: Space transportation system—Airfield facilities	[2] 29,900	1979	HAC
Holloman AFB, N. Mex.: Energy conservation investment program	[1] 630	1980	HAC
Seymour Johnson AFB, N.C.: Small aircraft maintenance dock	[1] 3,350	1980	HAC
Blytheville AFB, Ark.: Air installation compatible use zone	[3] 200	(4)	HASC
Upper Heyford RAF, United Kingdom: Airfield security improvements	[1] 1,550	1978	HAC

[1] The 6 projects so annotated were not submitted to Congress by the Air Force. They were added to the authorization bill during congressional session but were not appropriated. All those requirements are still valid and we are therefore requesting appropriation in this program.

[2] The Vandenberg project was submitted by the Air Force and was deferred as more appropriate in a future fiscal year. Both fiscal year 1981 MCP authorization and appropriation are necessary to support the Space Shuttle program.

[3] The Blytheville AICUZ project was not submitted by the Air Force; but was added by the SASC in fiscal year 1978 and not authorized.

[4] Not authorized.

IMPACT OF BASE REALIGNMENT ANNOUNCEMENT

Question. Are any projects in your request impacted by pending or planned base realignment announcement? (Provide a list and discuss the potential impact of the realignment announcement).

Answer. No. However, on March 29, 1979, the Air Force announced that operations at Rickenbacker AFB, Ohio would be reduced with the inactivation of Strategic Air Command's 301st Air Refueling Wing. Remaining at Rickenbacker AFB are the Air National Guard's 121st Tactical Fighter Wing flying A-7 aircraft and the 160th Air Refueling Group flying KC-135s. The Air Force Reserve's 302nd Tactical Airlift Wing Flying C-123 aircraft will also remain. Since we are continuing operations at Rickenbacker AFB, the requirement for the project to upgrade airfield pavements remains valid.

Question. Provide for the record a list of unfunded construction projects in order of priority totalling not more than $100 million that can be put under contract during fiscal 1981. Include with your list the project design status and the project form 1391.

Answer. While the Air Force has many unfunded projects which have not yet been submitted to the Congress, our more pressing appropriation need is for $240 million to fund authorized fiscal year 1980 and prior projects. This program underfunding was caused by recent Space Transportation System Construction cost increases, Congressional under-funding of MCP programs since fiscal year 1977, and inflation beyond that which was programmed. Approximately 96 projects are being deferred as a result of this $240 million shortfall. The large majority of these projects are 100% designed and ready for advertising. Further, all but two projects totaling $24 million will be ready for advertising by October 1, 1980. As the above prices reflect the total of the fiscal year 1979 and fiscal year 1980 programmed amounts, the actual shortfall will greatly exceed $240 million at the time of availability of fiscal year 1981 MCP funds.

In addition to those projects deferred due to underfunding, the following list represents, in order of priority, the unfunded projects not previously submitted to Congress. The design status as of April 1 is also shown for each project. We have also attached 1391's of each of these projects indicated with a (*). We do not have 1391's on the remaining projects but will submit them prior to April 18, 1980.

Priority, base, and project	Project authorization (thousands)	Design status Apr. 1, 1980
1. Various (Europe): Minimum essential facilities	$6,500	50
2.* Kadena: AD/AL avionics fac	2,500	35
3. Keesler: Precision meas. equip. lab	1,400	0
4.* Fairchild: Flight simulator	2,500	35
5.* Chanute: Unacc enl. pers. hsng. (504)	5,450	25
6.* Luke: Aircraft maintenance unit	2,650	35
7.* MacDill: Aircraft maintenance unit	1,700	45
8.* Wright-Patterson: Sys. mgmt. eng. fac	7,600	35
9.* Norton: AICUZ	9,200	NA
10.* Woodbridge: UEPH (112)	1,650	40
11.* Alconbury: Instrument landing sys. (ILS)	610	100
12. Gunter: UEPH	1,800	0
13.* Alconbury: ASR/PAR	610	100
14.* Carswell: Repair afld. rvmts	6,100	0
15. Keesler: Alter elec. distrib	900	30
16.* Reese: CBPO	2,560	90
17.* Offutt: Primary elec. dist	780	100
18.* Lakenheath: ILS	550	100
19.* Dover: Add to hyd. refueling	3,200	50
20.* Castle: Fuel sys. mnt. dock	3,450	35
21.* Tinker: Alt. elec. dist. sys	5,700	100
22.* Ramstein: ILS	570	100
23.* Zaragoza: ILS	700	35
24.* McClellan: Depot hyd. fac	9,100	35
25.* Arnold: Heat plant coal conversion	11,500	35
26.* Bentwaters: UEPH (94)	1,100	35
27.* Keesler: Med. food insp. fac	510	80
28.* Mildenhall: Diesel fuel storage	1,450	95
29.* England: Consol. supt. cntr	1,800	40
30.* Travis: Chapel center	2,200	35
31.* Andersen: POL storage dikes	4,000	100
32. Peterson: Heat plant/oil B.U	600	100
Total [1]	100,940	

[1] In addition to the regular military construction program 2 military family housing MCP projects at Loring AFB are urgently required. They are:

Improvements in existing family housing	Project authorization (thousands)	Design status
* Wherry—Improve 400 units	$9,681	50
* Capehart—Improve 114 units	1,084	35

Note: 2 regional sewage connection projects at Ellsworth AFB, S. Dak., and Seymour-Johnson AFB, N.C., previously provided to your committee as possible fiscal year 1981 MCP adds have been deleted. These projects have slipped and would better be funded with future year appropriations.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Minimum essential aircraft operational facilities	LS			$5,812
Contingency (5 percent)				291
Total, contract cost				6,103
Supervision, inspection, and overhead (6.5 percent)				397
Total, request				6,500

Description of proposed construction.—Earth covered fuel storage tanks, concrete ammo storage igloos, lox storage, and dispersed aircraft parking. Includes all civil, structural, electrical, mechanical utilities, and support items.

Requirement.—As required.

Project.—Construction of minimum-essential facilities for dispersed aircraft parking and on-base fuel, storage and munitions storage in accordance with NATO criteria at follow-on forces Collocated Operating Bases (COBs).

Requirement.—These minimum-essential facilities are required to make the bases operationally ready to accept follow-on forces. The facilities will allow combat operations by prepositioning minimum-essential supplies. The large number of aircraft which would be required in a contingency situation cannot be accommodated on existing Air Force bases. The prepositioning of essential operational facilities at existing allied airfields provides the dispersal and expansion capability to bed down follow-on forces at the least possible cost.

Current situation.—Completed technical agreements with host nations indicate essential maintenance facilities will be available for US follow-on forces. Minimum-essential logistic support, storage and dispersal pavement shortfalls at these bases preclude their support of combat operations. The FY 78 MCP provided $25M for the first phase of this program.

Impact if not provided.—Non-availability of these minimum-essential facilities drastically reduces operational readiness and our capability to disperse and bed down augmentation forces is severely restricted. This work is for forces not currently assigned to NATO and is thus not eligible for NATO funding.

Location and item	Scope	Cost (thousands)
Chievres AB, GE:		
Dispersed pavement	LS	$1,000
Fuel storage with fillstand	1,250 CM	3,250
Sola AB, NO: Munitions storage	9 igloos	2,250
Total		6,500

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Add to and alter avionics facility	LS			$1,810
Addition	SF	9,795	$127.80	(1,252)
Alteration	SF	9,300	60.00	(558)
Supporting facilities				425
Electric	LS			(18)
Transformer	KVA	1,500	93.35	(140)
Water, sanitary sewer, heat	LS			(15)
Roads, parking, and walks	SY	1,000	21.00	(21)
Site improvement	LS			(27)
Fire protection	CF	108,000	1.89	(204)
Subtotal				2,235
Contingency (5 percent)				112
Total, contract cost				2,347
Supervsion, inspection, and overhead (6.5 percent)				153
Total, request				2,500

Description of proposed construction. Masonry walls, concrete foundation and floor slab, concrete roof. All electrical, mechanical, and structural alterations to provide an effective and functional avionics maintenance facility. Includes electrical standard set shops, reparable assets control center, laser sensor pod maintenance shop, avionics intermediate shops, training room, administrative and support space, utilities and necessary support. Air Conditioning—20 tons.

Requirement.—116,551 SF. Adequate: 59,900 SF. Substandard: 46,856 SF.

Project.—Addition to and alteration of an existing facility to provide an adequate avionics shop in support of new theater aircraft.

Requirement.—A property sized facility is required to house the office and shops needed to accomplish intermediate level maintenance work for new aircraft and associated test equipment. The facility requires adequate floor space for three sets of test stations, three electrical standard sets, reparable assets control center, an air conditioned environment, smooth floor and drop ceilings. This shop will provide theater-wide intermediate maintenance for all new Air Force aircraft being assigned to the Pacific. This portion of the shop is to service F–16 aircraft being deployed to Korea.

Current situation.—About 9,300 SF of the existing substandard space is available for this function, but must be extensively upgraded to include structural, electrical, and mechanical work. No available space exists to accommodate the balance of the requirement.

Impact if not provided.—Intermediate level avionics maintenance will not be available in the Pacific for new aircraft scheduled for deployment.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Precision measurement equipment lab	SF	15,520	$75.40	$1,170
Support facilities				94
Electrical	LF	380	20.25	(8)
Transformer	KV	300	62.65	(18)
Water	LF	730	17.80	(13)
Sanitary sewer	LF	850	13.20	(11)
Gas	LS	470	25.50	(12)
Site improvement	LS	1		(16)
Communications	LF	150	20.00	(3)
Other	LS	1		(13)
Total, cost				1,264
Contingency (5 percent)				63
Estimated contract cost				1,327
Supervision, inspection, and overhead (5.5 percent)				73
Total, request				1,400

Description of proposed construction.—Masonry walls, concrete foundation and floor slabs, structural steel frame, semi-permanent partitions, dust free and environmental controls in critical areas, vacuum systems, unobstructed ceiling height of 10′–0″, sheet vinyl floor coverings. Area includes calibration repair, dimensional, optical and radial; classified vault; technical library and training; bench stock and awaiting parts storage; receiving issue and storage; administrative and support space; loading dock. Air conditioning—70 tons.

Requirement.—15,520 SF. Adequate: 0. Substandard, 13,620 SF.

Project.—Construction of a new Precision Measurement Equipment Laboratory.

Requirement.—Highly sophisticated and extensive PME used to maintain modern aerospace equipment, including radar and communication equipment, must be periodically repaired, recalibrated and certified to insure accuracy, procision and reliability. A facility of proper size and configuration, clean, vibration free and adequate environmental controls is required to obtain necessary standards of calibration.

Current situation.—The altered portion of Hangar No. 1 (Bldg. 4201) existing Precision Measurement Equipment Laboratory, was inadequately designed and poorly constructed. The environment is difficult or impossible to precisely control and moisture condensation from ducts has caused overhead acoustical tile to fall. A dust-free lab is difficult to maintain and vibration from mechanical equipment affects adjusting and calibration procedures. Equipment is carted over uneven floor to and from trucks which further complicates calibration/repair/adjusting of precise and sensitive equipment.

Impact if not provided.—Time and resources will be expected fruitlessly due to equipment being out of calibration due to vibration, dust, moisture or rough handling. Critical equipment will have calibration accuracy and credibility reduced.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Flight simulator training facility	SF	18,600	$111.20	$2,068
Supporting facilities				200
Electric	LS			(58)
Transformer	KVA	1,000	61.50	(62)
Water, sanitary sewer, and heat	LS			(34)
Site improvement	LS			(18)
Roads, parking, and walks	SY	2,100	12.85	(27)
Subtotal				2,268
Contingency (5 percent)				113
Total, contract cost				2,381
Supervision, inspection, and overhead (5 percent)				119
Total, request				2,500
Installed equipment from other appropriations		(nonadd)		(27,600)

Description of proposed construction.—Masonry walls, concrete foundations and floor slab, steel structural frame and roof system. Includes an aircraft flight simulator room, computer and hydraulic equipment rooms, maintenance supply, storage, administration with relocatable partitions, and training area, support space and utilities. Air Conditioning—150 Tons.

Requirement.—18,600 SF. Adequate: 0. Substandard: 9,448 SF.

Project.—Construction of a new flight simulator training facility.

Requirement.—A facility of proper size and configuration is required to house a new flight simulator in support of B–52 aircraft. This simulator represents the latest advances and techniques which include large degree motion capability and visual display of the airborne environment. As a full mission simulator, it will permit the training of pilots in all phases of flight, including takeoffs and landings. This equipment will be used to initially qualify all aircrews in the aircraft and to maintain proficiency of assigned aircrews. Increased flight simulator time in relationship to actual flight time provides required crew proficiency at a reduced cost.

Current situation.—A flight simulator facility with adequate bay area and ceiling clearance is required to house the new simulator and combat crew training functions. Because of the high bay requirement, alteration or an addition to an existing facility is not feasible. Aircrew training units are currently located in a warehouse structure. Pilot training is accomplished in a mobile flight simulator which is periodically transported to Fairchild by rail.

Impact if not provided.—Failure to provide this facility will require pilots to perform extensive temporary duty at an alternate location thereby reducing overall mission effectiveness.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Unaccompanied enlisted personnel housing (504 PN)				$4,300
Dormitory	SF	84,168	$48.12	(4,050)
Administration	SF	3,256	76.78	(250)
Supporting facilities				643
Transformers	KVA	1,000	74.00	(74)
Water and sewers	LS			(40)
Gas and steam lines	LS			(20)
Storm drainage VC	LS			(40)
Demolition (IWC)	LS			(30)
Site improvement	LS			(189)
Roads, parking, and walks	LS			(200)
Security lighting	LS			(50)
Subtotal				4,943
Contingency (5 percent)				247
Total, contract cost				5,190
Supervision, inspection, and overhead (5 percent)				260
Total, request				5,450

Description of proposed construction.—Load-bearing walls and concrete footings, foundation floor slab, and roof system. Includes bedrooms, baths, closets, lounges, central storage, laundry, and utility rooms. Grade Mix: 504 PN, E1–E4.

Requirement.—6,435 PN. Adequate: 324 PN. Substandard: 2,986 PN.

Project.—Construct one building, 504 PN Unaccompanied Enlisted Personnel Housing (UEPH).

Requirement.—Adequate living quarters are required to properly accommodate enlisted personnel. These facilities must provide sufficient space and the degree of privacy necessary for proper rest, relaxation, and individual well-being. Modern and functional living quarters, which will attract and retain highly skilled enlisted personnel are essential for maintaining an effective, all-volunteer Air Force.

Current situation.—Approximately 46 percent of existing UEPH is substandard. Facilities have inadequate environmental controls, central latrines, insufficient personal storage, depressing decor, and inadequate personal privacy. Upon completion of this project, Phase 1 of 3, 45 percent of UEPH will meet the standards for new construction.

Impact if not provided.—Substandard living accommodations will continue to be a factor in low morale, reduced productivity, and dissatisfaction with Air Force life for unaccompanied enlisted personnel.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Aircraft maintenance unit facilities	SF	39,200	$55.90	$2,191
Supporting facilities				213
Electric	LF	1,000	40.00	(40)
Transformer	KVA	265	62.00	(16)
Demolition	LS			(29)
Water, sewer, and compressed air	LS			(70)
Site improvement	LS			(35)
Roads, parking, and walks	SY	1,750	12.90	(23)
Subtotal				2,404
Contingency (5 percent)				120
Total, contract cost				2,524
Supervision, inspection, and overhead (5 percent)				126
Total, request				2,650

Description of proposed construction.—Seven masonry buildings with precast concrete roof decks with built-up roofs, concrete foundations and floor slabs. Area includes supervisory offices, tool and parts rooms, classrooms, tech order file and study rooms, male and female latrines, mechanical equipment rooms, necessary utility support at seven locations. Air Conditioning—70 Tons.

Requirement.—57,400 SF. Adequate: 17,550 SF. Substandard: 8,720 SF.

Project.—Construction of new flight line aircraft maintenance shop/administrative facilities.

Requirement.—Implementation of the squadron maintenance concept requires that adequate shop/administrative facilities be available as close as possible to the aircraft maintained by the Aircraft Maintenance Unit (AMU). One structure is required for managing each of the seven AMUs which consist of approximately 160 personnel each, their tools, and related support equipment for 24 fighter aircraft.

Current situation.—Aircraft maintenance personnel work from 19 relocatable (trailer) structures, prefabricated buildings and line "shacks" scattered along the aircraft parking apron. Available usable facilities space is grossly inadequate, most units do not have latrine facilities, acoustical attenuation is inadequate to reject noise from operation of adjacent jet aircraft engines, and environmental control is poor in most cases. Under such circumstances, squadron maintenance control, is at best, submarginal with corresponding adverse effect upon aircraft availability.

Impact if not provided.—Continued use of temporary, substandard facilities with resultant loss in management capability, wasted manpower, and degraded aircraft maintenance capability.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Aircraft maintenance unit facilities (4 EA)	SF	22,400	$55.85	$1,240
Supporting facilities	LS			302
Electrical	LS			(41)
Water and sanitary sewer	LS			(211)
Demolition and removal	LS			(50)
Subtotal				1,542
Contingency (5 percent)				77
Total, contract cost				1,619
Supervision, inspection, and overhead (5 percent)				81
Total, request				1,700

Description of proposed construction.—Four pre-engineered buildings, steel frames, concrete foundations and floor slabs. Areas include offices, tool/parts rooms, classrooms, technical order file and study rooms, latrines, mechanical equipment rooms, and utility support facilities for four buildings. Air conditioning—60 tons.

Requirement.—22,400 SF. Adequate: 0. Substandard: 9,600 SF.

Project.—Construction of four permanent aircraft maintenance unit (AMU) facilities.

Requirement.—Replacement of portable (trailer) buildings with permanent aircraft maintenance unit facilities is necessary to provide adequate shop/administrative space for maintenance personnel. One structure is required for managing each of the four AMUs. Each AMU consists of approximately 160 personnel, their tools, and related support equipment.

Current situation.—Aircraft maintenance unit personnel work from four portable buildings that provide less than half the authorized floor space and do not have latrines. In addition, the existing buildings are rapidly deteriorating to where the structural integrity of the roofs and walls is questionable. The original building manufacturer is no longer in business thus making it impossible to obtain replacement parts for failed components. The estimated life expectancy of these buildings is about two years.

Impact if not provided.—Aircraft maintenance capability will continue to be degraded due to inadequate working space and conditions for maintenance personnel. Also, it is likely that some or all AMUs will have to be relocated to other substandard facilities away from their aircraft. This would result in increased maintenance delays and lowered aircraft availability rates.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Alter systems management engineering facilities				$6,821
Alterations, facility 20016	SF	293,555	$19.87	(5,834)
Alterations, facility 20008	SF	37,500	24.53	(920)
Roof repairs, facility 20008	LS			(67)
Supporting facilities				73
Removal, buildings 16A and 16C	LS			(22)
Service parking, facility 20016	SY	1,550	20.00	(31)
Primary electric power, facility 20008	KVA	500	40.00	(20)
Subtotal				6,894
Contingency (5 percent)				345
Total, contract cost				7,239
Supervision, inspection, and overhead (5 percent)				361
Total, request				7,600

Description of proposed construction.—For Building 16, alter walls and doors; insulate exterior walls, remove skylights and insulate roof deck; modernize electrical, fire protection, and plumbing systems, adjust environmental control system for energy conservation; upgrade basement, walls, and floors; correct safety hazards and install restrooms in basement. For Building 8, alter interior walls and doors; repair roof and insulate; modernize environmental control and electrical systems; replace interior plumbing utilities and fire protection.

Requirement.—1,343,958 SF. Adequate: 288,879 SF. Substandard: 1,055,079 SF.

Project.—Improve working environment and correct deficiencies. Provide increased flexibility and density.

Requirement.—Modernization/rehabilitation to an adequate working environment for efficient and functional use. Modernization of the interior electrical, fire protection and plumbing systems are essential if continued safe, effective use of this space is to be realized. With 450 personnel within the basement of Building 16, restroom facilities are essential.

Current situation.—The facilities are structurally sound, but Building 16 lacks the mechanical and plumbing systems necessary to provide an adequate working environment within the basement. The skylight roof design in Building 16 and uninsulated exterior walls and ceiling space result in severe energy loss. The outdated and deteriorated electrical system present an extremely hazardous fire potential. No basement restrooms exist for the almost 450 people occupying the area in Building 16.

Impact if not provided.—Electrical hazards, energy waste and inadequate plumbing will continue to result in a poor working environment for personnel. The potential for loss of structure or life will continue.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Land acquisition	LS			$9,200
Total, request				9,200

Description of proposed construction.—Land acquisition, including real estate interests in fee or restrictive easements, to establish necessary expanded clear zones as part of the Air Installation Compatible Use Zone program within the Continental United States. Provides expanded clear zones *extending to 3,000 feet from runway thresholds (at the ends of the runways).*

Requirement.—125.4 acres.

Project.—To acquire in fee or restrictive easement the necessary land interest for expanded clear zones at the ends of the runway.

Requirement.—As part of the Air Installation Compatible Use Zones (AICUZ) program, expanded clear zones have been delineated and identified for property rights acquisition to prevent development in this high accident potential area.

Current situation.—Expanding developments accompanying recent population growth in urban areas have resulted in progressive encroachment upon Air Force installations. The Department of Defense is giving priority attention to protecting the operational capability of airfields by acquiring necessary interests in land around affected installations. When this program started, 64 of the 86 CONUS bases subject to AICUZ did not have expanded clear zones under Air Force control. Acquisition of clear zones at nine bases has been accomplished by 10 U.S.C. 2672 minor land acquisition authority. Of the remaining 55 bases, 45 are being accomplished from 1980 and prior programs. This request will satisfy expanded clear zone land requirements at one location in this program.

Impact if not provided.—Continued urban encroachment upon Norton Air Force Base, California, which has high accident and noise potential. This could result in the ultimate possibility of curtailment or relocation of flying operations to installations where land use is controlled.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Unaccompanied enlisted personnel housing (112 PN)	SF	18,704	$69.56	$1,301
Supporting facilities				195
Electric	LS			(30)
Transformers	KVA	100	61.50	(6)
Water, sanitary sewer, and heat	LS			(70)
Site improvement	LS			(34)
Roads, parking, and walks	SY	2,730	20.00	(55)
Subtotal				1,496
Contingency (5 percent)				75
Total, contract cost				1,571
Supervision, inspection, and overhead (5 percent)				79
Total, request				1,650

Description of proposed construction.—Load-bearing walls and concrete footings, foundation, floor slab, and roof system. Includes bedrooms, baths, closets, lounges, central storage, laundry, and utility rooms. Grade Mix: 112 E1–E4.

Requirement.—1,919 PN. Adequate: 15 PN. Substandard: 1,314 PN. Deficit: 590 PN.

Project.—Construct one bldg. 112 PN, Unaccompanied Enlisted Personnel Housing (UEPH).

Requirement.—Adequate living quarters are required to properly accommodate unaccompanied enlisted personnel. These facilities must provide sufficient space and the degree of privacy necessary for proper rest, relaxation and individual well being. Modern and functional living quarters, which will attract and retain highly skilled enlisted personnel are essential for maintaining an effective, all-volunteer Air Force.

Current situation.—Approximately 500 unaccompanied enlisted personnel at RAF Bentwaters/Woodbridge are living off base drawing quarters allowance due to nonavailability of government quarters. These individuals are competing with accompanied personnel in a very scarce private housing market. Sixty-eight percent of existing UEPH is substandard. Upon completion of this project, Phase 1 of 5, only six percent of UEPH will meet the standards of new construction.

Impact if not provided.—Substandard living accommodation will continue to be a factor in low morale, reduced productivity, and dissatisfaction with Air Force life for unaccompanied enlisted personnel.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Aircraft instrument landing and navigational facility				$500
System facilities	LS			(500)
Supporting facilities				53
Electric emergency power	LS			(53)
Subtotal				553
Contingency (5 percent)				28
Total, contract cost				581
Supervision, inspection, and overhead (5 percent)				29
Total, request				610

Description of proposed construction.—Concrete foundations and platforms for NAVAID instruments and antenna; pre-engineered metal building with concrete floor and foundations; electric power and grounding system ducts and cabling; access roads and emergency power; area is at east end of runway.

Requirement.—As required.

Project.—Construction of support facilities for a solid state ILS.

Requirement.—A new solid state ILS is required to increase the safety of landing aircraft during periods of darkness and reduced visibility.

Current situation.—The runway is not currently equipped with an instrument landing system. Weather conditions are such that heavy reliance must be placed on instruments during the launching and recovery of high-performance tactical aircraft. Existing navigation and landing aids do not provide the required reliability. Closing of the airfield during periods of severely limited visibility due to NAVAID equipment outage is unacceptable from an operational standpoint. With the completion of this project, various restrictions placed on airfield operations during inclement weather can be eliminated.

Impact if not provided.—Support of the flying mission will continue under inefficient conditions.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Unaccompanied enlisted personnel housing (150 PN)	SF	25,050	$48	$1,202
Support facilities				430
Site improvements	LS			(306)
Electric	LS			(16)
Water	LS			(8)
Sanitary sewer	LS			(10)
Gas	LS			(8)
Storm drainage	LS			(10)
Communications	LS			(2)
Roads, paving, walks	LS			(70)
Total, cost				1,632
Contingency (5 percent)				82
Total, contract cost				1,714
Supervision, inspection, and overhead (5 percent)				86
Total request				1,800

Description of proposed construction.—Load-bearing walls and concerte footings, foundation, floor slab, and roof system. Includes bedrooms, baths, closets, lounges, central storage, laundry, and utility rooms. Grade mix: 150 EI–E4. Air-conditioning: 40 tons.

Requirement.—401. Adequate: 228. Substandard: 0. Deficit: 173.

Project.—Construct one building, 150 PN, unaccompanied enlisted personnel housing (UEPH).

Requirement.—Adequate living quarters are required to properly accommodate enlisted personnel. These facilities must provide sufficient space and the degree of privacy necessary for proper rest, relaxation, and individual well being. Modern and functional living quarters, which will attract and retain highly skilled enlisted personnel are essential for maintaining an effective all volunteer Air Force.

Current situation.—Approximately 40 percent of all UEPH for Gunter AFS do not meet modern day living standards, nor are they economically upgradable. These dormitories are wooden World War II buildings.

Upon completion of this project, 95 percent of the UEPH spaces will be adequate by Air Force standards.

Impact if not provided.—Substandard living accommodations will continue to be a factor in low morale, reduced productivity, and dissatisfaction with Air Force life for unaccompanied enlisted personnel.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Aircraft instrument landing and navigational facility (ASR/PAR)				$270
Shelter with system facilities	LS			(270)
Support facilities				283
Electric/emergency power	LS			(140)
Transformer	KVA	300	$61.50	(18)
Water, sanitary sewer, and heat	LS			(29)
Site improvements	LS			(88)
Roads and parking	SY	500	16	(8)
Subtotal				553
Contingency (5 percent)				28
Total, contract cost				581
Supervision, inspection, and overhead (5 percent)				29
Total, request				610

Description of proposed construction.—Concrete foundations and platforms for NAVAID instruments and antenna; pre-engineered metal building with concrete floor and foundations; electric power and grounding system ducts and cabling; access road and emergency power. Includes navigational systems operations, maintenance and training area; support and necessary utilities.

Requirement.—As required.

Project.—Construction of support facilities for Airport Surveillance Radar (ASR) and Precision Approach Radar (PAR) air traffic control systems.

Requirement.—Air traffic control radars are necessary to provide precise, effective and safe control of air traffic around an installation.

Current situation.—Many aircraft cannot land in minimum weather conditions because of the current system. The existing mobile unit, tube type is becoming difficult to maintain and cannot be effectively modified for state-of-the-art performance. This project will provide the necessary solid state radar support to enhance aircraft control and approach.

Impact if not provided.—Support of the flying mission will continue under inefficient conditions.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Repair airfield pavements	SY	217,362		$5,345
Taxiways Nos. 196 and 197	SY	(19,184)	$10.79	(207)
Alert apron (No. 166)	SY	(45,800)	88.14	(4,037)
Taxiway/aprons intersection (Nos. 160, 161, 182)	SY	(66,360)	10.92	(725)
Parking aprons/south overrun (Nos. 77, 81, 160, 151)	SY	(98,617)	3.32	(328)
Taxiway No. 180	SY	(13,145)	3.65	(48)
Supporting facilities				188
Blast deflectors	LF	200	290.00	(58)
Fueling hydrants	EA	2	56,000.00	(112)
Demolition	LS			(18)
Total cost				5,533
Contingency (5 percent)				277
Estimated contract cost				5,810
Supervision, inspection, and overhead (5 percent)				290
Total, request				6,100

Description of proposed construction.—Repair of various PCC and asphaltic concrete airfield pavements. Area includes the south overrun, Facility 151; Taxiways 180, 182, 196, and 197; and Aprons 77, 81, 160, 161, and 166. All necessary utilities.

Requirement.—1,343,473 SY Adequate: 634,556 Sy Substandard: 696,117 SY.

Project.—Repair of various airfield pavements and the construction of two new B–52D alert aircraft parking stubs.

Requirement.—Adequate airfield pavements are required to support the missions of the 7th Bomb Wing (SAC), the 301st Tactical Fighter Wing (AFRES) and all transient aircraft coming to Carswell Air Force Base. The pavements must provide a smooth, unbroken surface with the proper skid resistance for takeoffs, landings and taxiing of mission aircraft. Also, to provide the required number of alert aircraft parking stubs so that all alert aircraft can be located inside the alert area.

Current situation.—Twelve slabs on the keel section of Taxiway 197 have failed. Water penetrating through joints and cracks has deteriorated the subbase of Taxiways 180, 196, and 197, causing settlement of the slabs and resulting in uneven surfaces. Serious deterioration on portions of the alert apron (166) is evident, especially on stubs 63 and 65 where the asphalt under the main landing gear of B–52D aircraft present an FOD hazard, and the depressions cause a restriction to aircraft towing operations. The pavement that stubs 69–72 are located on is only 10" PCC, and it is already overstressed 100 percent due to the two B–52D alert aircraft that must be located there as an interim measure. This condition will cause premature failure of the pavement at these stubs. The alert B–52D aircraft must be on these stubs, since the security of the weapons loaded on the aircraft requires that the aircraft be inside the fenced alert aircraft parking area. The two new alert apron stubs are needed since two alert KC–135 aircraft currently must be parked outside the alert apron on parking spots 61 and 62, which are on the north apron.

This necessitates special security manpower and man-hour expenditures due to the increased vulnerability of these aircraft to sabotage and attack. The portion of the north apron (160) used by the 301st TFW must be resealed before water penetrates through the joints and deteriorates the subbase. The pavement at the intersection of Taxiway 182 and Aprons 160 and 161 has broken and dropped due to subbase failure and aircraft operations must be rerouted around the area. This intersection is the main access route for KC–135 aircraft to the runway and high speed taxiway, and many man-hours and fuel is wasted due to its closure. Aprons 77 and 81 are used for the maintenance and parking of B–52D aircraft. The surface of these aprons and their shoulders need repair to prevent FOD damage due to loose aggregate and holes in the pavement surface.

Impact if not provided.—Aircraft operations will continue to be hazardous during rains due to lack of proper skid resistance on the runway. Continued deterioration of the taxiways and aprons will result in additional failed slabs and require more expensive repairs. The possibility of damage to mission aircraft due to uneven and failed pavements and FOD will increase. The mission of the 7th Bomb Wing will be seriously jeopardized due to inadequate airfield pavements.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Main switching station	LS			$523
Feeder A	LS			24
Feeder B	LS			45
Feeder C	LS			45
Feeder D	LS			30
Feeder E	LS			54
EMCS Connection	LS			91
Subtotal				812
Contingency (5 percent)				41
Total, contract cost				853
Supervision, inspection, and overhead (5.5 percent)				47
Total, request				900

Description of proposed construction. Install new main switching station; provide five 23 KV base feeders; provide adequate overcurrent protection.

Requirement.—As required.

Project.—Provides capability for supplying electrical power to existing and future base facilities.

Requirement.—Base must have an electrical distribution system with capability to switch loads where needed, with some excess capacity for growth.

Current situation.—Main feeders are operating at capacity or overload. Conductors are in poor condition from long high load use. Limited capacity exists for load transfer. Construction and demolition of facilities has shifted the load center, and distribution has not been altered to safely accommodate the shift. This is the first of a three phase upgrade program.

Impact if not provided.—Continued operation in a dangerous overload condition may cause failure in one or more electrical feeders, which will cause prolonged disruption to the technical training mission.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Primary electric distribution line	LS			$708
Underground distribution in new duct	LF	4,250	$65.80	(280)
Overhead distribution	LF	10,100	12.25	(124)
Underground distribution in existing duct	LF	8,500	18.15	(154)
Regulators, reclosers, and switches	LS			(150)
Subtotal				708
Contingency (5 percent)				35
Total, contract cost				743
Supervision, inspection, and overhead (5 percent)				37
Total, request				780

Description of proposed construction.—Construct 4,250 linear feet of new 15 KV underground and 10,000 linear feet of 3 phase overhead primary electric distribution line, replacement of 8,500 linear feet of underground distribution in existing duct, regulators, reclosers, and switches.

Requirement.—143,809 LF. Adequate: 120,959 LF. Substandard: 8,500 LF.

Project.—Install underground and overhead electric distribution lines on base and to the Capehart housing area.

Requirement.—To provide additional electric power capacity to the Capehart housing area, hospital, and the new hospital addition currently under construction.

Current situation.—The capability to provide continuous electric power service to customers is being jeopardized by the increased loading on the electrical system caused by new construction and upgrading of facilities. The loss or breakdown of part of the electrical system would leave the housing area and base facilities without power for long periods. This project would provide the additional power necessary to carry the increased load for mission support. The electrical system has not been upgraded since the construction of 300 additional housing units, the new addition to the USAF Regional Hospital, and the construction or renovation of several other facilities. This has caused a considerable overload problem during peak loads. Additionally, central air conditioning for all family housing has been programmed. This overload problem is typified by an existing feeder capacity rated at 9,000 KW Handling Peak Loads of 11,500 KW.

Impact if not provided.—The primary distribution line will continue to operate above its rated capacity during peak loads causing possible electrical failure. No additional capacity can be absorbed without severely limiting new construction or major modification projects.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Consolidated base personnel office	SF	30,472	$57.00	$1,737
Supporting facilities				585
Electric	LS			(32)
Transformer	KVA	450	59.35	(27)
Water, sanitary sewer, and gas	LS			(15)
Storm drainage	LF	2,720	56.10	(153)
Site improvement	LS			(70)
Road, parking, and walks	SY	5,450	21.65	(118)
Security lighting	EA	10	1,000.00	(10)
Fire protection	SF	30,472	2.65	(81)
EMCS connection	LS			(45)
Seismic	LS			(34)
Total, cost				2,322
Contingency (5 percent)				116
Estimated contract cost				2,438
Supervision, inspection, and overhead (5 percent)				122
Total, request				2,560

Description of proposed construction.—Construction of a multi-story consolidated base personnel office; masonry walls, concrete foundation and floor slab and built-up roof. Area includes administrative space, offices, classrooms, testing rooms, projection rooms, storage area, waiting rooms and lobby, conference area and mechanical equipment rooms. All necessary utilities. Air Conditioning—60 tons.

Requirement.—30,472 SF. Adequate: 0. Substandard: 21,776 SF.

Project.—Construction of a consolidated personnel administration and support facility.

Requirement.—A centrally located adequately sized and functionally configured facility is needed to provide a single point of service for all assigned military and civilian personnel. Services requiring accommodations include: personnel support functions of records processing, career guidance and counseling, personal affairs, personnel systems management, education services, family services, management engineering and professional military education.

Current situation.—Personnel support functions are located in five widely separated buildings. Three are of frame construction, are in a state of advanced deterioration and cannot be economically restored. Dispersal of related functions makes it difficult to provide effective and responsive personnel support. Substandard buildings will be disposed of upon completion of this project.

Impact if not provided.—Inefficient use of manpower, processing delays and high maintenance costs will continue.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Aircraft instrument landing and navigational facility	LS			$449
System facilities	LS			(449)
Supporting facilities				50
Electric emergency power	LS			(50)
Subtotal				499
Contingency (5 percent)				25
Total, contract cost				524
Supervision, inspection, and overhead (5 percent)				26
Total, request				550

Description of proposed construction.—Concrete foundations and platforms for NAVAID instruments and antenna; pre-engineered metal building with concrete floor and foundations; electric power and grounding system ducts and cabling; access roads and emergency power; area is at east end of runway.

Requirement.—As required.

Project.—Construction of support facilities for a solid state ILS.

Requirement.—A new solid state ILS is required to increase the safety of landing aircraft during periods of darkness and reduced visibility.

Current situation.—The runway is not currently equipped with an instrument landing system. Weather conditions are such that heavy reliance must be placed on instruments during the launching and recovery of high-performance tactical aircraft. Existing navigation and landing aids do not provide the required reliability. Closing of the airfield during periods of severely limited visability due to NAVAID equipment outage is unacceptable from an operational standpoint. With the completion of this project, various restrictions placed on airfield operations during inclement weather can be eliminated.

Impact if not provided.—Support of the flying mission will continue under inefficient conditions.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Addition to hydrant fueling system	LS			$2,756
Supporting facilities				146
Pumphouse alteration	LS			(21)
Demolition existing pits	LS			(125)
Total, cost				2,902
Contingency (5 percent)				145
Total, contract cost				3,047
Supervision, inspection, and overhead (5 percent)				153
Total, request				3,200

Description of proposed construction.—Modification of two existing hydrant refueling systems to provide hydrant outlets for aircraft parking positions where outlets either do not exist or where existing outlets are inadequate.

Requirement.—49 Hydrant Outlets. Adequate: 26. Inadequate: 33.

Project.—This project will provide 9 new double hydrants (18 outlets) and 5 new single hydrants complete with fuel supply/return lines, laterals, control pits, defuel pumps and cathodic protection. Project includes removal of 13 existing single hydrants and 10 existing double hydrants.

Requirement.—Adequate mission support requires that refueling hydrant outlets be provided at each of 22 C–5 and 6 transient aircraft parking and cargo loading positions. Refueling hydrant outlets are needed at C–5 and transient parking positions on operational and cargo-passenger loading aprons. They are needed because hydrants provide the most effective fuel system available for peace and wartime aircraft flow patterns. They are also the safest and most energy efficient means of transferring fuel between storage tanks and aircraft. The heavy flow of strategic cargo airlift during peacetime exercises and wartime scenarios through Dover dictate a fast and safe hydrant refueling capability.

Current situation.—The two hydrant systems requiring modification were not designed for C–5 aircraft currently assigned. The typical average fuel load required for a C–5 is 16,000 gallons. Four truck loads of fuel must be hauled three miles round trip for each aircraft load. This generates 16 connect and disconnect actions vs. one of each with the hydrant system. Each action subjects the workers and a $61,000,000 aircraft to possible fuel spills and related fire potential.

Impact if not provided.—The inefficient and hazardous methods currently in use would be continued. High value aircraft would continue to be exposed to the considerable hazards associated with refueling truck and aircraft towing operations.

COST ESTIMATES

Item	U/M	Quantity	Unit Cost	Cost (thousands)
Fuel system maintenance dock	SF	17,580	$119.50	$2,101
Seismic design	LS			183
Supporting facilities				830
Site improvement	LS			(93)
Water and sewer	LS			(88)
Electrical	LS			(101)
Pavement, concrete, 21 in	SY	2,300	42.71	(97)
Pavement, concrete, 6 in	SY	1,800	15.55	(28)
Pavement, bituminous concrete, 3 in	SY	1,000	17.00	(17)
Fuel tank	LS			(15)
Fire protection system	SF	17,580	17.51	(308)
Demolition	LS			(45)
Total, cost				3,114
Contingency (5 percent)				156
Estimated contract cost				3,270
Supervision, inspection, and overhead (5.5 percent)				180
Total, request				3,450

Description of proposed construction.—Construction of a high bay aircraft fuel system maintenance hangar. Area includes covered or enclosed aircraft fuel system maintenance space, tool storage, administrative space, toilet facilities, mechanical equipment room and utilities. Air conditioning—26½ tons.

Requirement.—17,580 SF. Adequate: 0. Substandard: 24,870 SF.

Project.—Construct a high bay fuel system maintenance dock for assigned B52 and KC135 aircraft.

Requirement.—Climatic control of aircraft fuel system repair docks are required IAW Technical Order 1–1–3. The hazards involved in fuel system repair make it imperative that an enclosed, properly equipped facility be provided. The solvents and sealants used in this function are designed to perform within certain temperature and humidity ranges and this project will provide this control. During inclement weather and high wind/dust conditions, aircraft fuel systems must be protected from contamination.

Current situation.—The present facility used is totally inadequate and provides nose shelter only. The present facility was designed as a B47 dock. The main doors operated in sections vertically. The door system is totally inoperable and irreparable. Its age, limited capability/configuration and condition prohibits consideration to upgrade of repair. Presently it provides very minimal weather protection and fire protection. During inclement weather, work must cease in this facility. These delays impact the assigned missions at Castle AFB.

Impact if not provided.—Personnel will continue working in a very inadequate, marginal facility.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Alter electrical distribution system	LS			$4,921
Transformers	KVA	42,060	$61.50	(2,587)
Distribution lines	LS			(1,498)
Distribution substation	KVA	12,000	69.65	(836)
Supporting facilities				249
Switchgear	LS			(249)
Subtotal				5,170
Contingency (5 percent)				259
Total, contract cost				5,429
Supervision, inspection, and overhead (5 percent)				271
Total, request				5,700

Description of proposed construction.—All electrical work necessary to upgrade distribution system to acceptable standards. Includes distribution lines, transformers, metering systems, switchgear and substation components. Necessary support.

Requirement.—As required.

Project.—Alteration of the existing 4,160 volt electrical distribution system and upgrade to a 12,470 volt system.

Requirement.—This Air Logistics Center (ALC) provides direct support for such weapon systems as the A-7, B-52, KC-135 and the Airborne Warning and Control System (AWACS) E3A aircraft. Increased power demands in the industrial area have generated a need for a higher voltage distribution system.

Current situation.—The existing substandard electrical distribution system is being operated at maximum capacity. There is no flexibility in providing to the facilities wthin the system, and a power outage causes disruption to many important functions. This project will reduce the metering points and provide flexibility to avoid outages that create costly hours of downtime each year. Increasing the voltage and reducing the number of metering points will also result in considerable cost savings.

Impact if not provided.—Continued use of low capacity electrical distribution system could adversely impact the Tinker ALC and the AWACS operational missions.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Aircraft instrument landing and navigational facility				$430
System facilities	LS			(430)
Supporting facilities				80
Electric emergency power	LS			(80)
Subtotal				510
Contingency (5 percent)				25
Total, contract cost				535
Supervision, inspection, and overhead (6.5 percent)				35
Total, request				570

Description of proposed construction.—Concrete foundations and platforms for NAVAID instruments and antenna; pre-engineered metal building with concrete floor and foundation; electric power and grounding system ducts and cabling; access roads and emergency power.

Requirement.—As required.

Project.—Construction of support facilities for a solid state ILS.

Requirement.—A new solid state ILS is required to increase the safety of landing aircraft during periods of darkness and reduced visibility.

Current situation.—The runway is currently equipped with one ILS system at the west end; this forces incoming aircraft to utilize this solo system during certain adverse weather conditions and thereby causing prolonged flying time and landing delays. The new ILS will provide additional capability to handle air traffic in marginal weather.

Impact if not provided.—Support of the flying mission will continue under inefficient conditions.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Aircraft instrument landing and navigational facility				$450
Shelter and equipment foundations	LS			(115)
Glide slope grading	LS			(335)
Supporting facilities				182
Electric emergency power	LS			(132)
Access roads and parking	SY	2,000	$25	(50)
Subtotal				632
Contingency (5 percent)				32
Total, contract cost				664
Supervision, inspection, and overhead (5.5 percent)				36
Total, request				700

Description of proposed construction.—Concrete foundations and platforms for NAVAID instrument and antenna; pre-engineered metal building with concrete floor and foundations; electrical power and grounding system ducts and cabling; access roads and emergency power. Area is at east end of runway.

Requirement.—As required.

Project.—Construction of support facilities for a solid state ILS.

Requirement.—A new solid state ILS is required to increase the safety of landing aircraft during periods of darkness and reduced visibility.

Current situation.—The runway is currently equipped with an obsolete tube type instrument landing system which is unreliable for use in inclement weather. This system is becoming increasingly difficult to maintain and support. In addition, it canot be economically upgraded to meet current state-of-the-art performance requirements. The new solid state ILS will be more reliable and provide safer recovery of aircraft in marginal weather.

Impact if not provided.—Support of the flying mission will continue under inefficient conditions.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Depot hydraulics facility	SF	100,000	$67.60	$6,758
Supporting facilities				1,496
Electrical	LS			(469)
Steam/condensate line	LS			(160)
Roads, parking, and walks	LS			(366)
Utilities, site improvements, miscellaneous	LS			(501)
Total, cost				8,254
Contingency (5 percent)				413
Estimated contract cost				8,667
Supervision, inspection, and overhead (5 percent)				433
Total, request				9,100
Installed equipment—Other appropriations				(1,565)

Description of proposed construction.—A permanent (250′ x 400′) truss/column structure with environmental control, masonry walls, concrete floor, lighting, restrooms, admin area, utilities, fire protection, exterior paving and features for mechanized material handling system.

Requirement.—100,000 CF. Adequate: 45,568 SF. Substandard: 23,667.

Project.—A building for production line overhaul of aeronautical hydraulics components, to prevent technological mission failure.

Requirement.—Sacramento ALC is single point, Air Force specialized center for these components, processing 50,000 major items annually. A consolidated industrial facility, integrating modern automated test equipment and efficient flow process systems is mandatory to keep pace with advancing technology, increased production and high quality. Concurrently, the rising overhaul costs for these increasingly sophisticated, hybird electronic/hydraulic components must be reduced significantly below costs for older types. Acquisition of a new facility and replacing antiquated test equipment and processes is essential to this objective. Completed items are supplied thru logistics "pipelines" to tri-service combat-ready squadrons worldwide, equipped with first line tactical/strategic aircraft and missiles.

Present situation.—Shops are located in two very congested buildings nearly ½ mile apart. Bldg 243A (45,568 SF) was austerely constructed ($900,000) in 1970 for workloads 49 percent less than is now produced and projected thru 1990. Site restrictions and airfield boundaries make expansion impossible. Bldg 355 (23,667 SF), a 38 year old converted woodmill is totally antiquated and not worthy of upgrading or expansion. Present buildings cannot provide adequate space and environment necessary for the new test equipment and process flow demands.

Impact if not provided.—(a) Loss of $.9 million a year savings in reduced production costs; (b) Inability to reuse Bldg 243A for critically needed Physical Science Laboratory causing additional $6 million new construction; (c) Inability to establish/maintain advancing technology base and install new automated equipment; (d) Inability to meet war surge production; (e) Loss of substantial savings in technical use of electrical and thermal energy, "Proposal to utilize 45,568 SF of hydraulics shop in B/243A as a conversion to 141-765 Physical Science Lab in a follow on MCP."

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Heating plant coal conversion	MB	77,600	$127.58	$9,900
Boiler controls, piping, wiring	LS			(2,620)
Air pollution controls, installation	LS			(2,900)
Coal and ash systems replacement	LS			(2,890)
Smoke stack, installation	LS			(520)
Refuse storage and feed systems	LS			(440)
Building modifications	LS			(515)
Mothball boilers	LS			(15)
Supporting facilities				530
Electrical	LS			(450)
Paving and drainage	LS			(80)
Total, cost	LS			10,430
Contingency (5 percent)				522
Estimated contract cost				10,952
Supervision, inspection, and overhead (5 percent)				548
Total, request				11,500

Description of proposed construction.—All civil, structural, electrical and mechanical alterations required to install new refuse derived fuel and coal fired boiler in the existing steam generating plant building. Includes new coal and ash handling equipment, electrostatic precipitator, controls and instrumentation, utilities and necessary support.

Requirement.—200,000 LB/HR. Adequate: 120,000 LB/HR. Substandard: 80,000 LB/HR.

Project.—Construct a new boiler to replace two existing boilers, modify existing building, and replace and modify existing equipment.

Requirement.—A coal/refuse fired boiler will eliminate dependence upon natural gas and fuel oil for the production of steam for testing and base operations. The use of coal and/or refuse derived fuel will reduce fuel cost, avoid interruptions due to oil and gas curtailments, and free natural gas and fuel oil for other national requirements. This project would allow over 90 percent of the base steam requirements to be satisfied with refuse derived fuel or coal. Natural gas/oil consumption for steam could be limited to peak demands approximately 30 days annually.

Current situation.—The existing 200,000 LB/HR steam plant contains four boilers fired with natural gas with fuel oil standby. Two of the boilers will be replaced by a single coal/refuse fired boiler while retaining a 200,00 LB/HR plant capacity. The two boilers to be replaced will be mothballed.

Impact if not provided.—The steam plant would continue using natural gas and fuel oil which could cost up to one million dollars more yearly than a coal/refuse fixed boiler. It would also require the continued use of natural gas and fuel oil, which could be used to heat about 6,400 homes. Severe winters and oil embargoes could adversely impact the base's mission.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Alter unaccompanied enlisted personnel housing (94 PN)	SF	17,280		$960
Structural alterations	SF	(17,280)	$34.65	(599)
Electrical alterations	LS			(161)
Mechanical alterations	LS			(200)
Supporting facilities				38
Electric	LS			(15)
Water, sanitary sewer, and heat	LS			(23)
Subtotal				998
Contingency (5 percent)				50
Total, contract cost				1,048
Supervision, inspection, and overhead (5 percent)				52
Total, request				1,100

Description of proposed construction.—Alteration of all structural, electrical and mechanical work to include removal of central latrines, improvements in noise attenuation, improved personnel safety features. Includes bedrooms, baths, closets, lounges, central storage, utility rooms. Grade Mix: 94 E1–E4.

Upgrade Requirement.—1,919. Upgraded: 15. To be Upgraded: 1,904.

Project.—Alteration and modernization of one building for Unaccompanied Enlisted Personnel Housing (UEPH).

Requirement.—Adequate living quarters are required to properly accommodate unaccompanied enlisted personnel. These facilities must provide sufficient space and the degree of privacy necessary for proper rest, relaxation and individual well being. Modern and functional living quarters, which will attract and retain highly skilled enlisted personnel are essential for maintaining an effective, all-volunteer Air Force.

Current situation.—Bentwaters and Woodbridge personnel share the same UEPH. Currently, 78 percent of existing UEPH are substandard. These facilities do not provide adequate privacy, storage and lounge space, lighting, environmental control, and sanitary facilities. This is the second phase of a five-phase program to upgrade existing UEPH at RAF Bentwaters/Woodbridge.

Impact if not provided.—Substandard living accommodation will continue to be a factor in low morale, reduced productivity, and dissatisfaction with Air Force life for unaccompanied enlisted personnel. This facility is considered by NATO to be a national responsibility and is not eligible for NATO funding.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Medical food inspection facility	SF	3,000	$120	$360
Supporting facilities				100
Electrical/transformers	LS	1		(10)
Water/sanitary sewer and gas	LS	1		(20)
Site improvement	LS	1		(42)
Roads/parking and walks	SY	520	25	(13)
Communications support/fire protection	LS	1		(10)
Surveillance system tie-in	LS	1		(5)
Total, cost				460
Contingencies (5 percent)				23
Estimated contract cost				483
Supervision, inspection, and overhead (5.5 percent)				27
Total, request				510

Description of proposed construction.—Masonry walls, concrete foundation and floor slab and built up rof. Area includes food examination laboratory, zoonoses control clinic, waiting/training room, administrative offices, central supply, latrines, mechanical room and utiilties. Air conditioning—15 tons.

Requirement.—3,064 SF. Adequate: 64 SF. Substandard: 2,000 SF.

Project.—Construction of a new medical food inspection facility.

Requirement.—A facility is required in which examination and laboratory tests of foods plus diagnosis and treatment of animals having diseases transmittable to man can be conducted. Additionally, adequate space for administrative functions, training of assigned personnel and a professional library must be provided.

Current situation.—Function is presently housed in a portion of a 9,000 SF semi-permanent warehouse constructed in 1942. Twenty-six personnel are assigned. All Veterinary Services functions are conducted for Keesler AFB, Naval Construction Battalion, Gulfport, MS, procurement inspection of seafood at Pascagoula, MS, Bayou La Batre and Mobile, AL. Adequate temperature controls do not exist, parking is limited, and physical location is unsuitable for span of control.

Impact if not provided.—The mission will continue to be impaired through inadequate space for assigned personnel and equipment.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Diesel fuel storage	BL	11,323		$798
Supporting facilities				517
Truck fillstands	LS			(250)
Electric	LF	500	$54.00	(27)
Storm drainage/interceptor	LS			(31)
Site improvement	LS			(48)
Fencing	LY	410	55.40	(23)
Road and paving	SY	4,600	30.00	(138)
Subtotal				1,315
Contingency (5 percent)				66
Estimated contract cost				1,381
Supervision, inspection, and overhead (5 percent)				69
Total, request				1,450

Description of proposed construction.—Conventional semiburied steel bulk storage tank with external shell of reinforced concrete. Includes pumps, controls, and associated piping and hydrants for two truck fillstands. Includes all site development, utility connections, and paving.

Requirement.—11,323 BL. Adequate: 0 BL. Substandard: 4,145 BL.

Project.—Provide U.S. conjunctive funding for $8.6 million NATO project to construct jet fuel storage, upgrade distribution system and install a hydrant fueling system. U.S. funds will provide a diesel fuel storage facility.

Requirement.—Adequate diesel fuel storage is required to support current and future requirements for vehicle and generator use.

Current situation.—The two small, 41-year-old, diesel storage tanks are not adequate to support on-base storage requirements. Deterioration is extensive and seepage has created a serious potential ground water pollution problem. Water ingress into the tanks has degraded the quality of the fuel. British Government officials and HQ USAFE technical evaluations have determined the tanks are beyond economic repair and must be abandoned.

Impact if not provided.—The ability of the base to support generation of airlift missions will be degraded due to lack of sufficient quantity and quality of diesel fuel. Lack of U.S. commitment to correct a serious pollution problem may have an adverse effect with host nation support for ground power and support vehicles.

Additional.—A NATO project for jet fuel storage has been programmed in Slice 32. In order to take advantage of reduced cost by inclusion with a larger scope NATO project, it is necessary that this companion project be constructed concurrently.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Consolidated support center	SF	23,700	$56.01	$1,327
Supporting facilities				298
Electric	LS			(53)
Water, sanitary sewer, and heat	LS			(37)
Site improvement	LS			(52)
Special foundation	SF	23,700	1.38	(33)
Roads, parking, and walks	SY	4,430	12.82	(57)
Fire protection	LS			(66)
Subtotal				1,625
Contingency (5 percent)				81
Total, contract cost				1,706
Supervision, inspection, and overhead (5.5 percent)				94
Total, request				1,800

Description of proposed construction.—Steel frame, masonry walls, concrete foundation and floor slab, and built-up roof. Area includes administrative space, conference rooms, computer space, storage space, toilets and mechanical equipment room. All exterior utilities and support. Air Conditioning—75 Tons.

Requirement.—23,700 SF. Adequate: 0. Substandard: 30,574 SF.

Project.—Construct a consolidated support center to house various related administrative/support air base group and wing organizations.

Requirement.—A centrally located, functional facilities is required to adequately house the wing and group commanders and principal staff functions.

Current situation.—These functions are housed in two deteriorated, substandard wood frame facilities. One building has extensive termite damage to the foundation and flooring. Natural decay has been accelerated due to moisture and insufficient ventilation in the crawl space beneath the flooring. A structural defect in the second building causes the wall and ceiling linings to periodically separate along the longitudinal axis. One such incident was severe enough to necessitate replacement of the builtup roofing as well as repair of the ceiling and walls. Termite damage is also extensive in this building. Efforts to control termites, while still in progress, have not been successful. Both facilities will be disposed of upon completion of this project.

Impact if not provided.—Personnel in related functions will continue to work in two widely separated, substandard facilities thus adversely affecting productivity, morale, and mission effectiveness. Since no other facility is available for these functions, exorbitant O&M fund expenditures would be necessary to extend the useful life of these facilities.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Chapel center (310 seats)	SF	15,750	$110.50	$1,740
Supporting facilities				246
Electric	LS			(44)
Water, sanitary sewer, and heat	LS			(59)
Site preparation	LS			(68)
Roads, parking, and walks	SY	5,000	14.92	(75)
Subtotal				1,986
Contingency (5 percent)				99
Total, contract cost				2,085
Supervision, inspection, and overhead (5.5 percent)				115
Total, request				2,200

Description of proposed construction.—Masonry walls, concrete foundations and floor slab, structural steel frame and roof system with relocatable partitions. Includes nave; chancel, sacristy, sacrament, classrooms, administration, activity and adult education areas and kitchen. Necessary support and utilities. Air conditioning—30 Tons.

Requirement.—71,215 SF. Adequate: 17,792 SF. Substandard: 3,758 SF. 2,300 SE, 450 SE. 150 SE.

Project.—Construction of a new Chapel Center in support of the religious program at Travis AFB.

Requirement.—A facility to provide additional chapel seating, REF classrooms, and administrative and assembly space is required to fullfill basic religious needs for 22,511 assigned military personnel and their dependents, and conduct chapel programs for the various faith groups.

Current situation.—Three chapels, total seating capacity 600 seats, are in use; one of these chapels (150 seats) is a totally inadequate structure which has no capabilities for religious education or group meetings. There is only 3,550 square feet of REF space on base. Average weekly religious education enrollment for 1978 was 1,160 people, requiring borrowed use of an elementary school located away from the center of the base. There are 39 organizations which use existing REF space (which can accommodate only one meeting at a time).

Impact if not provided.—Adequate worship seating and religious education space will not be available on base, requiring continued use of borrowed facilities; the installation chaplain will be forced to consider curtailment of various high attendance programs such as Gospel Choir Concerts, Kid's Krusade, and other ecumenical activities.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Pollution control POL dikes and basins	LS			
Andersen tank farm No. 1	SF	495, 245	$1.72	$852
Andersen tank farm No. 2	SF	1, 137, 547	2.18	2, 480
Potts junction tank farm	SF	77, 805	3.04	237
Powerplant storage tank	SF	4, 852	5.05	25
Subtotal				3, 594
Contingency (5 percent)				180
Total, contract cost				3, 774
Supervision, inspection, and overhead (Navy) 5.5 percent				208
Total request				3, 982
Total, request (rounded)				4, 000

Description of proposed construction.—Apply reinforced poured-in-place concrete or equal material, impervious to water and POL fuels, over dikes and interior basin areas at Andersen Tank Farms No. 1 and No. 2, storage tank at the 20-megawatt power plant, and the Potts Junction Tank Farm.

Requirement.—As required.

Project.—Pave dikes and interior basin areas of twenty-three above-ground fuel storage tanks.

Requirement.—Impervious dike and basin surfaces are required to contain JP–4 Avgas and diesel fuel in the event of a serious tank leak or rupture.

Current situation.—Existing dikes are constructed of crushed coral with asphalt coating. The interior basin areas are plain coral. During Super-Typhoon Pamela, 21 May 76, there was 22.6 inches of rain with sustained winds exceeding 145 knots. The interior basin areas flooded for a short period and the interior wave action caused serious erosion of asphalt dike surfaces. Large areas of compacted coral sloughed off and reduced the integrity of the dike containment. After the torrential rains subsided, the impounded water percolated through the coral basin and damaged asphalt dike areas. During immediate inspection after the typhoon, practically no water remained within the diked areas. Under existing conditions, fuel from a major tank rupture would percolate through the coral until it would reach the water lens under the island. This would contaminate the entire fresh water supply for Andersen AFB.

Impact if not provided.—Fuel from a major tank rupture would contaminate the fresh water supply of the Base.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
New boilers	LS			$479
Replace existing underground piping	LS			25
Underground oil storage tank and piping	LS			40
Subtotal				544
Contingency (5 percent)				27
Total, contract cost				571
Supervision, inspection, and overhead (5 percent)				29
Total, request				600

Description of proposed construction.—Remove six existing boilers and install two new high temperature hot water boilers, approximately 6,000,000 BTUH output each, with dual fuel, natural gas and fuel oil capability. Project will include new dual fuel stacks; draft fans; boiler controls; replacement of deteriorated underground distribution piping; repair and modify piping terminal units in Bldg. 140 and Bldg. 625; miscellaneous temperature control system modifications; and the installation of a underground steel oil storage tank and underground fuel oil piping to new boilers.

Requirement.—As required.

Project.—Install two new dual fuel boilers and fuel oil storage unit.

Requirement.—Replace existing deteriorated gas fired boilers with two new dual fuel boilers that will provide base facilities with sufficient uninterruptable heat to permit mission accomplishment.

Current situation.—The existing boilers serve two facilities: Bldg. 140, Aircraft Maintenance Hangar and Bldg. 625, Aircraft Maintenance Shop. Each boiler room houses three boilers, two boilers to handle the heating load and one to act as emergency stand-by. All six boilers are Crane cast iron sectional boilers, approximately 25 years old, and each has an input of approximately 3,500,000 BTUH. In October 1979 a service contract was awarded to inspect and repair the boilers which serves Bldg. 140. The inspection revealed the boilers were severely deteriorated and required replacement. These boilers cannot be converted to dual fuel capability.

Impact if not provided.—Failure of the heating system can occur due to the deteriorated boilers and/or cut-off of natural gas fuel due to shortage.

Additional information/clarification—requested.—Provide lists of fiscal year 1979 and 1980 comprising the $240 million shortfall.

Additional information/clarification follows.—The list follows:

MILITARY CONSTRUCTION UNDERFUNDING—DEFERRED PROJECTS

The following fiscal year 1979 and fiscal year 1980 projects are temporarily deferred due to lack of funds and fiscal year 1979 total authorization limit.

Systems acquisition (59.7):	*Millions*
Ramstein telecom Ctr	[1] $6.5
Various locations special operations facility	[1] 2.8
Robins weapons system comp engineering facility	5.8
Various locations special operations facility	2.8
Roberts Liberia Ops Fac	5.0
Bergstrom squadron flight Ops	.9
Bergstrom flight simulator (RF4)	1.7
Bergstrom A/C maintenance facility (RF4)	1.0
Bergstrom maintenance docks (RF4)	3.3
Bergstrom avionics maintenance (RF4)	1.0
Moody A/C maintenance docks (F4)	2.2
Myrtle Beach fuel system maintenance (A-10)	1.0
Shaw munitions maintenance (F16)	2.2
Shaw weapons release (F16)	.6
Osan flight simulator (F4)	.7

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[1] Fiscal year 1979 projects.

	Millions
Systems acquisition (50.7)—Continued	
Bentwaters Flt simulator (A–10)	3.1
Sembach arm/disarm pad (A–10)	1.0
Sheppard rapcon	.7
Scott data processing	5.4
England various ACFT maintenance (A–10)	1.2
Hahn various ACFT maintenance	1.8
Tinker fire station (P–15)	[1] 1.0
MacDill fuel syst dock (F–16)	1.5
Little Rock fire station (P–15)	.5
Hahn flight simulator	3.5
Howard security facility	2.5
Readiness (20.5):	
Kunsan upgrade taxiway	3.5
Osan arm/disarm pad	1.4
Osan A/C shelters	12.0
USAFE Cobs	3.6

DEFERRED PROJECTS

Quality of life (63.8):	
Castle alter dorms	$3.9
Eglin Chapel Center	[1] 1.5
Castle Chapel Center	[1] 1.2
USAFA cadet library addition	[1] 4.0
Rhein Main Officers Club	[1] 2.7
Wright-Patterson alter dorms	2.3
Laughlin dorms	3.2
Maxwell VOQ	4.0
Travis alter dorms	6.3
Ellsworth Hospital	11.8
George Hospital	16.5
Taegu Officers Quarters	.5
Ramstein alt chapel	.9
Ramstein alt dorms	.8
Upper Heyford alt dorms	1.8
Woodbridge dining hall	1.4
Eglin (aux No. 9) alter dorms	1.0
Mission support (22.4):	
Dover A/C corrosion control	[1] 7.3
Kelly alter elect dist	3.1
Maxwell academic classroom	2.6
Ellsworth upgrade afld pavements	2.6
Grissom upgrade afld pavements	4.7
Alconbury security police	.7
Ramstein supt equipment facility	.5
England acft maintenance control	.9
Energy (26.3):	
George	1.1
Lackland	1.0
Andrews	1.2
Kirtland	.7
McChord	.9
Davis-Monthan	1.8
Kelly	[1] 3.3
Wright-Patterson	[1] 1.2
Arnold	[1] 2.7
Edwards	[1] 3.4
Grand Forks	[1] .6
Holloman	[1] .5
Nellis	[1] .9
Newark	[1] .9
Tinker	3.5
Mather	1.7
Griffiss	.9

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[1] Fiscal year 1979 projects.

Pollution (2.7):	
Rickenbacker sewage main	[1] .9
Richards Gebaur regional sewage connection	1.1
Davis-Monthan dust control	.7
Other programs (3.1):	
Grissom AICUZ	[1] .3
March AICUZ	[1] .8
Buckley AICUZ	2.0
Total	240.0
STS (18.3):	
Final increment of fiscal year 1979 launchs complex	[1] 18.3
Various projects (23.2):	
Contingencies	23.2

[1] Fiscal year 1979 projects.

Question. On a recent trip to Keesler AFB, Mississippi, I was informed of current design percentages on the following three projects:

Project	PA (thousands)	Reported design status
1. Precision measurement equipment lab (PMEL)	$1,400	35 percent (not 10 percent).
2. Alter electrical	900	50 percent (not 30 percent).
3. Medical food inspection	510	90 percent (not 80 percent).

These percentages appear to be higher than those listed on the Air Force submittal. Please provide the current design status.

Answer. We are pleased to provide a further update on the three Keesler projects. On the first project, the PMEL, we do not know the basis of your 35 percent information. However, a recent check has confirmed that the current acceptable design is still 10 percent; the 35 percent submitted is scheduled for 4 June 1980. The other two projects have progressed in design rapidly since our original Air Force submittal. Design of the electric distribution project is currently 80 percent; the medical food inspection facility is 95 percent.

Additional information requested:

Reference note.—When were the two regional sewage connection projects for Ellsworth AFB and Seymour-Johnson AFB provided to Congress on the fiscal year 1981 MCP add list?

Additional information follows: The fiscal year 1981 MCP add list was an insert (Transcript pg. 100, line 5) for the 3 March Joint SAC/SASC hearing. Air Force provided it to OSD 13 March. OSD submitted it to the committee the first week of April.

PROJECTS-SPECIFIC

(Energy Conservation, Various Locations)

Question. Furnish the design status on all ECIP and pollution abatement projects.

Answer. The listing follows:

Fiscal year 1981 ECIP design status

Base:	*Completion*
Andrews	35
Barksdale	35
Blytheville	80
Cannon	35
Carswell	35
Chaunte	35
Charleston	35
Dover	60

Base—Continued	Completion
Dyess	85
Ellsworth	35
Elmendorf	100
Fairchild	35
Griffiss	80
Grissom	35
Hickam	35
Hill	60
Holloman	35
K. I. Sawyer	35
Keesler	40
Kelly	35
Langley	100
Little Rock	35
Loring	10
Lowry	85
McDill	65
March	40
Mather	95
Maxwell	35
McClellan	30
Minot	35
Moody	80
Myrtle Beach	55
Nellis	35
Norton	95
Offutt	97
Pease	35
Robins	35
Scott	35
Tinker	30
Travis	35
Wright-Patterson	35

Fiscal year 1981 pollution design status

Base:	Completion
Bergstrom	70
Chanute	35
Loring	2
George	35
Holloman	80
Moody	55
Pease	35
Wurtsmith	100

ECIP ECONOMIC ANALYSIS SUMMARY

Location: Holloman AFB, N. Mex., fiscal year 1981.

Project: ECIP buildings 280, 325, 468, 800, 822.

Economic life: 25 years. Date prepared: 26 March 1980; prepared by: Capt. Odom/TAC.

COSTS

1. Nonrecurring initial capital costs:	
a. CWE	$460,000
b. Design	27,600
c. Total	487,600

BENEFITS

2. Recurring benefit/cost differential other than energy:	
3. Recurring energy benefit/costs:	
a. Type of fuel: Electricity:	
(1) Annual energy decrease (+)/increase (−) (MBTU)	960
(2) Cost per MBTU	$6.82
(3) Annual dollar decrease/increase ((1)x(2)) (per year)	$6,547
(4) Differential escalation rate (7 percent) factor	18.049
(5) Discounted dollar decrease/increase ((3)x(4))	118,117
b. Type of Fuel: Gas:	
(1) Annual energy decrease (+)/increase (−) (MBTU)	11,222.5
(2) Cost per MBTU	$3.62
(3) Annual dollar decrease/increase ((1)x(2)) (per year)	$40,625
(4) Differential escalation rate (8 percent) factor	20.05
(5) Discounted dollar decrease/increase ((3)x(4))	$814,531
c. Discounted energy benefits (3a(5)+3b(5))	$932,648
4. Discounted benefit/cost ratio (line 3e divided by line 1d)	$1.9
5. Total annual energy savings (3a(1)+3b(1))	$12,182.5
6. E/C ratio (line 6 divided by line 1a/1000)	26.5
7. Annual dollar savings (3a(3)+3b(3))	$47,172
8. Payback period (line 1a divided by line 7)	9.75

ENERGY CONSERVATION, VARIOUS LOCATIONS, HOLLOMAN AFB—SOLAR PROJECT

Question. Your E/C, SA, DBR numbers are incongruent. Provide the details of these calculations.

Answer. We have reviewed the economic and engineering analysis for the Holloman AFB project and have discovered an error in E/C number provided. The following updated calculations reflect the latest information on this project.

Building: Alter	Electric (kilowatt-hours	Gas (therms)
Bldg. 280:		
Exist	333,918	3,113
Alt 3	314,371	1,375
Savings	19,547	1,738
Bldg. 325:		
Exist	559,319	3,649
Alt 4	551,083	1,182
Savings	8,236	2,467
Bldg. 468:		
Exist	284,670	3,068
Alt 2	245,114	2,009
Savings	39,526	1,059
Bldg. 800:		
Exist	361,028	93,929
Alt 2	403,500	5,006
Savings	42,472	88,923
Bldg. 820:		
Exist	131,563	15,609
Alt 3	86,854	886
Savings	44,709	14,723
Bldg. 822:		
Exist	153,176	7,671
Alt 3	139,961	4,356
Savings	13,215	3,315
Total savings	[1] 82,761	[2] 112,225

[1] Million Btu (electric)=(82,761 kWh×11,600 Btu/kWh)÷106=960.

[2] Million Btu (gas)=(112,225 thm×100,000 Btu/thm)÷106=11,222.5.

Note: Estimated energy consumption data extracted from computer developed data.

WATER POLLUTION ABATEMENT, VARIOUS LOCATIONS

Question. Provide the economic analysis to show that this project is preferred over purchasing water.

Answer.

I. ECONOMIC ANALYSIS

A. Data:

1. Current Pease O&M cost to provide water from the base system: $.50/1,000 gallons.

2. Pease O&M cost to provide water after constructing water treatment facility: $1.00/1,000 gallons.

3. Current cost for Portsmouth to provide water to Pease: $.50 purchase price+$.30 base O&M cost: $.80/1,000 gallons.

4. Capital cost of constructing water treatment facility: $2.66 million.

5. Pease water system modification required to accept Portsmouth water: $0.1 million.

6. Pease average daily consumpion: 1 mgd.

7. Economic life: 20 years.

8. Interest rates: 10 percent.

B. Present worth comparison:

Project year	Capital investment	.Recurring operations	Annual cost	Discount factor	Present worth
1. Pease water treatment facility costs (in millions):					
0	2.66		2.66	1.00	2.66
1 to 20		0.365	.365	8.514	3.11
Total					5.77
2. Portsmouth water supply costs (in millions):					
0	X		X	1.00	X
0	.1		.1	1.00	.10
1 to 20		2.92	.292	8.514	2.49
Total					2.59+X
3. Connection charge: Equate present worth values: 5.77=2.59+X (X=3.18).					

The Air Force could spend up to $3.18 million on a connection fee in purchasing water from Portsmouth, and over a 20-year period, be provided with cheaper water than if a Pease water treatment facility is constructed.

II. SIGNIFICANT FACTORS BEYOND ECONOMICS

A. Portsmouth's water supply is not large enough to accommodate Pease. We would require funding to enlarge their supply. On a life cycle basis, a break-even expenditure would be $3.2 million.

B. The major consideration is health, not cost. If we did not pump from the aquifer, TCE would eventually migrate off the base. The health of people and livestock would be endangered. Aside from the serious consideration of health, the Government would be subject to law suits.

C. Given that health concerns are paramount, the Air Force would have to purge the ground water system. The procedure is similar to the treatment intended in this project except the treated water would be wasted. The procedure would take years; no one can determine how many. The ground water system can be purged as effectively by treating the water for base consumption without incurring the duplicate cost of purchasing water from the city.

ENERGY SHOWCASE INITIATIVES, MCCLELLAN AFB, CALIF.

Question. It is clear what you are doing with this project. What is an energy conservation center? How big is it? What will be in it?

Answer. The proposed Energy Conservation Center will consist of 7,200 square feet and contain all the necessary areas, i.e., demonstration, display, library, briefing room, etc., to provide the capability for demonstrating energy conservation technologies, effecting public relations and making state-of-the-art technology available to visitors from industry, government and the general public. Displays will consist of cathode ray tubes (CRT), or television screens, and other related mockups (engines and fuel cells) to show various methods of data gathering which will be used as a base against which future accomplishments can be measured. The briefing room will be for showing films and slides and for meetings with the various visitors and dignitaries to present the overall energy showcase initiative plan. Even the building will consist of an absolute minimum energy consuming design and, as such, will be a demonstration in energy technology in itself.

Question. Why wasn't the EMCS expansion included under the ECIP?

Answer. This was not included under the ECIP portion of the program because the purpose of this EMCS expansion is different from the other projects that the Air Force has programmed in the Energy Conservation Improvement Program (ECIP) in that it will be used for display, demonstration and data gathering in lieu of strictly dollar savings, payback and energy reductions per dollar invested.

Question. Why have you lumped these projects together?

Answer. The energy monitoring and control system (EMCS) portion of the project is a proposed expansion to the existing EMCS. It will monitor and control energy and provide the latest state-of-the-art data gathering and display systems. The EMCS console and related peripheral equipment will be housed in the proposed Energy conservation Center and will provide a solid data gathering base for all showcase initiatives as envisioned by the overall DOD/DOE concept.

Question. Provide the ECIP data on the EMCS expansion.

Answer. Based on the best information available at this time on which to estimate the kinds and magnitudes of data for ECIP projects of this type, the estimated annual dollar savings for this project is approximately $256,400, the energy saved (MBTU) per $1,000 invested is estimated at 41.7, and the simple amortization or payback is about 3.6 years.

Question. Provide details on the plans for the energy showcase initiatives of this site.

Answer. The Energy Showcase is a multiyear effort. We expect to program on the order of $120 million to construct and demonstrate advanced and current technology energy application through fiscal year 1985.

In the fiscal year 1982 program we are identifying $16.5 million for solar heating systems to a hangar and two dormitories, a wind generator, expansion and refinement of the energy monitoring control system, and various energy conservation devices.

In fiscal year 1983 and fiscal year 1984 we plan to install a central utility system. Key to this system is a coal fired boiler plant with an advanced combustion system, coal storage and handling, chilled water and steam and condensate systems, and environmental controls. We expect this complete system to cost about $100 million.

In 1985 we anticipate a very small effort to provide energy conservation devices for industrial facilities that may be spinoffs from other energy efforts at McClellan AFB.

SPACE SHUTTLE

Question. (Space Transportation System-Spacecraft Integration Facilities/Security Measures, Cape Canaveral Air Force Station, Florida.

a. Provide for the record the pertinent pages from the A-E contract showing scope of work and schedule.

Answer. The Spacecraft Integration Facilities (SPIF) and Security Measures are under design by two separate A-E firms. Contract documents are not normally retained at Headquarters, and therefore the requested pages from the A-E contract had to be obtained by telecopier from our Space Division office in Los Angeles. Better quality copy will be provided.

1. *SPIF.*—Attachment 1 (paragraphs 2 and 9), provides the scope of work. The additional data identified in paragraph 9c is furnished as Attachment 1A. Attachment 2 provides the design schedule developed by the A-E under the terms of paragraph 5a of the contract scope of work.

2. *Security modifications.*—Attachment 3 (paragraph 2) provides the scope of work. The design schedule included in the A-E contract is provided in attachment 4 (paragraph 1.4).

Additional Information/Clarification Requested:

Question No. 1. (Check design schedule; pretty rapid)

Question No. 2. (How does the SPIF schedule match? How can SPIF design start prior to completion of the PER?)

Additional information/clarification requested:

Answer No. 1. The schedule submitted in attachment No. 4 is a schedule to complete a Preliminary Engineering Report (PER) and a 30 percent design document (Project booklet of design criteria for the DOD Security Modifications). The period from 22 Feb 80 to 18 Apr 80 is considered sufficient to complete that type of effort. The PER will be given to a follow-on A/E for design of the Security Modifications.

Answer No. 2. The SPIF schedule, attachment No. 2 and the PER schedule, attachment No. 4, do not match because the work for the SPIF is completely independent of the PER (DOD Security Modifications). The SPIF construction will be on Cape Canaveral Air Force Station while the DOD Security Modifications are required at the Kennedy Space Center which is owned and operated by NASA. The work at Cape Canaveral Air Force Station is being designed and constructed by the Corps of Engineers while the work at the Kennedy Space Center is being designed and constructed by NASA. There is no interdependence.

ATTACHMENT 1

ARCHITECT-ENGINEER SERVICES FOR DESIGN OF SHUTTLE PAYLOAD INTEGRATION FACILITY, FISCAL YEAR 1981 MCP PAYLOAD PROCESSING CENTER, SOLID MOTOR ASSEMBLY BUILDING (SMAB), CAPE CANAVERAL AFS, FLA.

1. *General Statement of Services.*—The Architect-Engineer shall perform the services set forth herein for the design of Modifications to the existing Solid Motor Assembly Building to provide for fiscal year 1981 MCP Payload Processing Center, Phase III, Inertial Upper Stage, Solid Motor Assembly Building, Cape Canaveral AFS, Fla.

2. *Scope of Work.*—The design shall be based on criteria and other data furnished under paragraph 9 and shall not exceed the construction cost limitation of $15,360,000.

3. *Work Not Included.*—The following work required for this facility will be accomplished by the Government and therefore is not included in the design services to be performed by the Architect-Engineer.

(*a*) Topographic survey.

(*b*) Subsurface investigation.

4. *Services Furnished by the Government.*—The Government will obtain and furnish to the Architect-Engineer all topographic and subsurface data required by the Architect-Engineer in the design of the facility.

5. *Detailed Statement of Services.*—The Architect-Engineer shall perform the following services:

a. The Architect-Engineer shall, promptly after the execution of this contract, prepare and submit to the Contracting Officer for approval, a schedule showing the order in which the Architect-Engineer proposes to carry on the work, with dates on which he will start the several salient features of the work and the contemplated dates for completing the same. Such schedule shall provide for completion of all work hereunder within the contract time. The schedule shall be in the form of a progress chart at suitable scale so as to indicate with symbols the percentage completed at any time. The Architect-Engineer shall correct the progress schedule on the first day of each month and shall immediately deliver three copies to the Contracting Officer. The Architect-Engineer shall furnish sufficient technical, supervisory and administrative personnel to insure the prosecution of the work in accordance with the approved progress schedule.

b. The work will be accomplished in phases and will include, but is not limited to, the following:

(1) *30-Percent Design Phase.*—

(*a*) Prepare Early Preliminary Design Submittal (EPDS) in brochure form as prescribed by "General Design Guidance Fiscal Year 1981 Military Construction Program," and AFR 89-1, Attachment 3.

(*b*) Prepare a Construction Network Analysis.

(*c*) Upon completion of the work required under the 30-percent phase, the Architect-Engineer shall furnish documents as specified in paragraph 8 below.

(2) *60-Percent and 90-Percent Design Phases.*—Under these Phases the Architect-Engineer shall prepare contract plans, specifications, and cost estimate based

on the approved design developed under 30-Percent Design Phase. They shall be mutually consistent, free from ambiguities, and complete in all detail necessary to fully describe the work and permit solicitation of competitive bids. The design criteria requirements directed to be incorporated by the Contracting Officer shall be accurately reflected in the complete work and the format shall be as directed by the Contracting Officer. More specifically, the Architect-Engineer shall:

(*a*) Adapt Government designs, drawings, specifications and standards for buildings and other structures as necessary to meet the requirements of the approved layout of the proposed project, and prepare detailed design, design analysis, specifications and drawings in required form for buildings and other structures for which Government designs are incomplete and unavailable.

(*b*) Prepare final designs, detailed working drawings and specifications in accordance with Government standards necessary for the effective coordination and efficient execution of the construction work and revise such drawings and specifications if necessary. All such drawings will be prepared on pre-printed Mylar sheets which will be furnished without cost to the Architect-Engineer. Pencil leads used are to be those especially made for drawing on polyester film and should give lines of density that permit the reproduction of high quality direct photographic transparencies on film base at same scales. Care should also be taken that all lines and figures on drawings are open and of such density that 35 mm negatives can be made therefrom, giving clear, sharp negatives that can be enlarged to one-half the original scale or blown back to full scale.

Each original tracing to be furnished in accordance with this paragraph will carry a graphic scale to permit accurate scaling from half-scale drawings. Unused Mylar sheets shall be returned to the Government upon acceptance of final submittal. Bid documents will be reproduced by the Government at no expense to the Architect-Engineer.

(*c*) Furnish technical provisions of the contract specifications and other information in compliance with item 9.r. below.

(*d*) Prepare drawing and/or specifications for all items of equipment required to be procured by the Construction Contractor. Final drawings and specifications shall cover all items which are to be furnished by the Construction Contractor, and shall clearly indicate items of Government-furnished equipment (GFE) required to be installed by the Construction Contractor.

(*e*) Prepare an estimate of the cost of the proposed project promptly upon reaching a fully coordinated 60 percent stage of completion of design for all disciplines and another based on the final completed design drawings and specifications. Approximately 15 days after submittal of the 60 percent cost estimate, a cost estimate review conference will be conducted in the Mobile District Office. The Architect-Engineer shall be represented by the person(s) responsible for preparation of the cost estimate. Preparation of the estimate shall be in accordance with TM 5–800–2 and shall be in the general format and degree of detail of the sample furnished. The estimate and related data constitute the Government estimate and no information pertaining thereto will be disclosed by the Architect-Engineer, his associates, subcontractors or any of their employees except to the extent permitted by the Contracting Officer. The final cost estimate shall be mailed in double envelopes, the inner envelope being marked—"Final Government Estimate." Shuttle Payload Integration Facility, Solid Motor Assembly Building, Cape Canaveral, FL.

(*f*) Prepare a design analysis in accordance with ER 1110–345–700.

(*g*) Prepare a construction network analysis at the 60 percent, 90 percent, and Final Design Stage.

(*h*) Upon completion of the work required under Phase II, furnish documents specified in paragraph 8 below and return all manuals listed in paragrah 9 below which were furnished to the Architect-Engineer for his use during design.

(*i*) Immediately following submitttal of the unreviewed final plans and specifications, initiate a complete design review by all disciplines. Special emphasis shall be directed toward eliminating interference between HVAC, piping, electrical and structural systems. The marked-up check prints shall be forwarded to the Mobile District within 15 days of the submittal. Verified items should be marked in yellow, detected errors marked in red, and overlays included as necessary to show changes and corrections.

(*j*) The Architect-Engineer shall prepare and furnish to the Contracting Officer sufficient layout and elevation drawings and perform required space allocation evaluations to assure the Contracting Officer that equipment, ductwork, conduit, piping, lighting fixtures, etc., meeting requirements of construction specifications can be placed in the allocated space. If, after performing the above, the Architect-Engineer determines inadequate space is available and this lack of space results from imposed Government furnished criteria and/or instructions, the matter shall be immediately referred to the Contracting Officer for review and determination as to course of action. In addition, if the Architect-Engineer, after preparing drawings and evaluations, determines that sufficient space is not available and the lack of space is not imposed by Government criteria or instructions, he will revise the drawings, designs and other documents to provide sufficient space. If this action compromises the construction cost of the project, the Contracting Officer shall be notified and furnished substantiating information to show the need for increased cost. In all cases when the space allocation is determined to be satisfactory the layout drawings, sketches, evaluations, etc., shall be provided to the Contracting Officer for his use during construction of the project.

c. During the construction period the Architect-Engineer shall furnish advice as may be requested.

6. The Architect-Engineer shall, within five (5) working days after a conference or discussion, either telephonic or personal, prepare a written record of the meeting and/or discussion and furnish three (3) copies to the Contracting Officer. The written record shall include subject, names of participants, outline of discussion, and recommendation or conclusions. Each written record for the particular project under design shall be numbered in consecutive order.

7. The Architect-Engineer will be furnished comments from various elements of the District on plans and specifications prepared under this contract. Within seven (7) days after receipt of these comments the Architect-Engineer shall advise the Contracting Officer in writing as to the disposition of each comment. If the Architect-Engineer does not agree with the revisions, additions or deletions required by any comment, he shall clearly outline, with ample justification, the reasons for noncompliance in order that the comment can be reevaluated.

8. Upon completion of the various phases of the work, the Architect-Engineer shall furnish documents to the Contracting Officer and the Using Service as follows:

a. *Phase I—30-percent Design.*—At completion, furnished Preliminary Design as shown in the "Design Submittal" table below. The 60-percent design shall not be delayed because of this submittal, but shall be continued uninterrupted to scheduled completion.

b. *Phase II—60-percent and 90-percent Design.*—

(1) *Sixty Percent Submittal.*—Final design shall not be delayed because of this submittal, but shall be continued uninterrupted to scheduled completion. At 60-percent completion of final design furnish drawings and other data as outlined in the "Design Submittal" table.

(2) *90-percent Review Submittal.*—At completion of design furnish design documents for review as shown in the "Design Submittal" table.

(3) *Final Submittal.*—After review of item (2) above, by the Contracting Officer and incorporation of comments furnished by him, submit the design data shown in the "Design Submittal" table. Review comments, marked-up drawings, specifications, etc., furnished in response to review and comments as to deposition thereof shall be returned with this submittal.

9. The Architect-Engineer is furnished or will be furnished the following criteria and other pertinent data which are incorporated herein by reference:

a. General Guidance for Design of Fiscal Year 1981 Air Force Military Construction Program with Amendment 1, dated 23 March 1979, Amendment 2, dated 7 May 1979, and Amendment 3, dated 31 May 1979.

b. SADCO–CC Directive No. 1, dated 19 June 1979, with Air Force Design Instruction No. SS–79–6(D), dated 13 June 1979.

c. Project Booklet entitled "Facility Development Specification for Eastern Launch Site DOD Shuttle Payload Integration Facility," dated 29 August 1979 with Revisions in 154 pages, dated 1 October 1979 (Seven copies).

d. AFM 88–15, dated 8 January 1975, with Changes 1 through 6.

e. AFR 89–1, dated 20 June 1978.

f. DOD Construction Criteria Manual, DOD 4270.1–M, 1 October 1972.

g. MOB Form 69, "Detail Estimate."

h. TM 5–800–2, "Preparation of Cost Estimates, Military Construction," May 1966 (To be furnished).

1.0 SCOPE

This specification establishes the requirements and basic constraints imposed on the development of an Architectural and Engineering (A&E) design for a Space Transportation System (STS) Shuttle Payload Integration Facility (SPIF) consisting of modifications to the Solid Motor Assembly Building (SMAB) and the Vertical Integration Building (VIB) at the Eastern Launch Site (ELS). This effort is limited to SMAB modifications in the west bay and high bay, site work, roads, and a control room in the VIB.

3.0 REQUIREMENTS

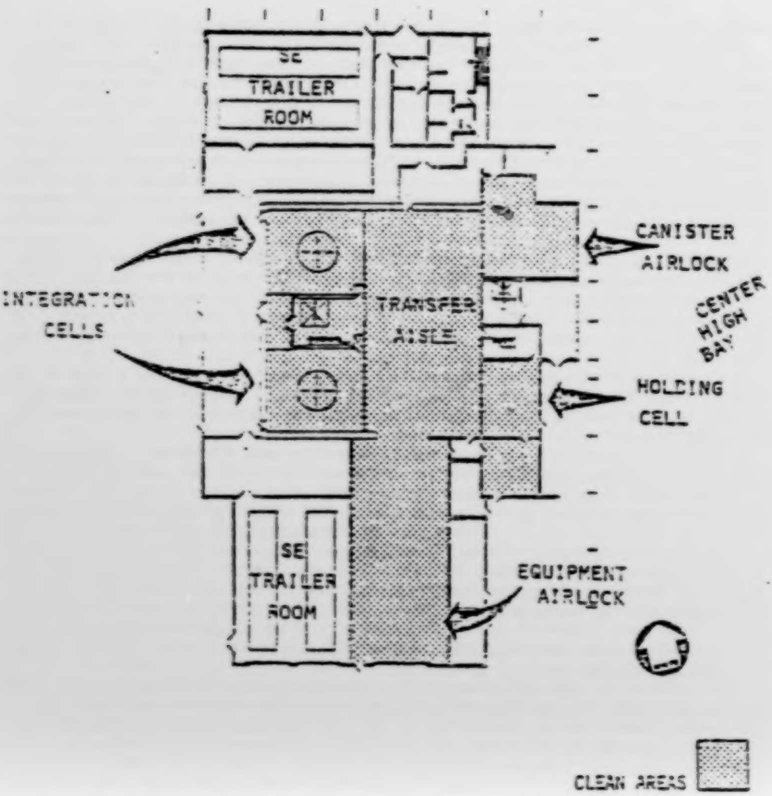
3.1 *Facility Definition.*—The potential schedule and operational conflicts in the current baseline flow for processing a DOD/STS cargo at the launch pad have led, through various studies and investigations, to the conclusion that a cargo integration facility for DOD cargo is required offline to Shuttle operations. Studies (Boeing document D290-10370-1, IUS/Spacecraft Integration Deintegration Facility Capability Study) also indicate that the existing SMAB in the Titan ITL complex would be a logical location for such an integration facility. The continuing activity programmed for the Titan program necessitates retention of some Titan SBM assembly capability; but allows the SMAB west low bay floor space designed as Shuttle Payload Integration Facility (SPIF) which is covered in this specification.

The ELS facilities covered in this specification are the SMAB and the VIB. In the SMAB, the west low bay is modified to provide the SPIF capability, which includes constructing an environmentally conditioned and contamination-controlled facility inside the structure of the bay. As shown in Figure 3.1-1, the SPIF is to include two integration cells, equipment rooms for installation of Shuttle simulation equipment and spacecraft test equipment, and appurtenant airlocks for entry and exit of transporters, equipment, and personnel. In addition, associated site and road work to support SPIF activity are a part of this specification. Modifications to the SMAB high bay for the Titan program are also required under this specification in conjunction with the SPIF modification. The SPIF is interconnected by communication links to a control room that is to be located in the VIB. In Figure 3.1-2, the areas in the SMAB and the VIB covered by this specification are shaded. The SPIF and SMAB perimeter will be designed and constructed per applicable security control requirements for the conduct of classified operations. Other modifications to the SMAB are being accomplished under a separate project to provide the facility for IUS assembly and checkout. These modifications primarily affect the SMAB east low bay with some exterior civil work and are by others.

The Shuttle payload (or cargo) processing concept is keyed to the Shuttle's Orbiter cargo bay. It is a cylindrical cavity 60 feet long and 15 feet in diameter with the cargo bay doors providing the outer portion of the bay. Shuttle cargo elements (or payloads) are carried in the bay by standard attachment fittings installed on longeron beams running the length of each side of the bay. DOD cargo elements are to be installed in the Orbiter while it is in the vertical attitude on the lanuch pad at Launch Complex 39, Pad A or B. DOD cargo elements may consist of non-deployable sorties (in which components are mounted on pallets carried in the cargo bay), spacecraft that are deployed directly from the cargo bay, or spacecraft that are deployed with an attached upper-stage propulsion craft. The cargo elements may be carried individually in a Shuttle mission or in various combinations, limited by targeting constraints and Shuttle weight limits.

In order to provide for the Shuttle launch rates being projected, off-pad (or off-line) prelaunch preparation and checkout of DOD cargo elements will be accomplished in the SPIF. The checked-out cargo elements will be transported to the launch pad for installation in the Oribter. A description of the flow is provided below.

Shuttle DOD Cargo Element Operational Concept—Figure 3.1-2 illustrates the operational flow for DOD/STS cargo build-up and integration at ELS.



a. *Spacecraft Manufacture and Assembly.*—It occurs at the factory location and the spacecraft is transported from the factory to the ELS by surface or air transport. When air transport is used, the aircraft is unloaded at Patrick Air Force Base or at the CCAFS Skid Strip and, the spacecraft is then moved to the SAB and/or the SPIF. These operations are the responsibility of the spacecraft organizations and are not covered further in this specification.

b. *Satellite Assembly and Functional Test.*—Operations at the launch site may be accomplished in the existing Spacecraft Assembly Building (SAB) facility at FLS. These operations are not covered further in this specification.

c. *Space Transporters and Equipment Vans.*—Transportation of the spacecraft is accomplished in transporter equipment provided by the various spacecraft organizations. At ELS, these transporters must enter the SPIF for spacecraft unloading.

In addition to transporters for the spacecraft flight hardware, equipment trailers are provided by the spacecraft organizations for test equipment to be used in prelaunch checkout. These trailers must be accommodated at the SPIF during spacecraft operations.

d. *Shuttle Cargo Integration/Deintegration Operations.*—These operations are conducted in the SPIF. Spacecraft (freeflyers, pallets, those requiring an upper stage, and the upper stages) are brought into the facility in the spacecraft transporters (typically from the skid strip or SAB). The facility crane is used to install them in one of the integration cells using the standard STS payload attachment hardware mounted on vertical columns and simulated longeron beams. The cargo element is then functionally tested, cleaned and prepared for its mission. The spacecraft test equipment trailers are used in the testing, and data links will be used to connect to spacecraft control stations at others locations. When an upper stage is to be part of the cargo element, the upper stage is installed on the vertical rails of the cell; then the spacecraft is mated to the upper stage and an interation test is conducted. The spacecraft is fueled while in the SPIF and may require mono-propellant fuel servicing or bi-propellant storage fuel and oxidizer servicing. The SPIF is to provide a simulation of the Orbiter in an Orbiter Avionics Simulator (OAS) room that will be used to conduct a verification of cargo to Orbiter interfaces. The Orbiter Functional Simulator (OFS) Control Center in the VIB is involved in this phase of the testing. These operations complete the off-line processing in the SPIF and the cargo is installed in the NASA MMSE Canister/Transporter and is transported to the launch pad. Roadway work is necessary to permit movement of this transporter to and from the SPIF.

e. *Integrate Cargo with Orbiter.*—At Launch Complex 39, Pads A and B are being modified by NASA for STS operations and the Rotating Service Structure (RSS) is provided for installation of cargo in the Orbiter. RSS operations are not covered further in this specification.

f. *Launch Operations.*—STS launch operations are conducted from Launch Complex 39. These operations are not covered further in this specification.

In the event of a launch abort from the pad, or a mission abort after launch, the DOD cargo element is to be returned to the SPIF for deintegration operations that generally are the reverse case of the normal flow described above.

3.1.1. *Facility Mission.*—To fill its role in the concept outlined above, the SPIF is to provide off-line capability to integrate or deintegrate a DOD Shuttle cargo including checkout and propellant servicing/deservicing operations. The facility will accommodate classified cargo in a secure and environmentally controlled area. Airlocks will provide for controlled entry of personnel and equipment into the contamination controlled clean area which provides some degree of RF radiation protection also.

Two separately and environmentally controllable multi-level integration cells within the clean area will provide the space to integrate, checkout, and service the cargo. Support rails, simulating the Shuttle longeron beams, will be provided for supporting the cargo in the cell. The SPIF and associated facilities will provide functional/physical simulation of the Orbiter to facilitate off-line verification of interfaces between spacecraft and the IUS and/or between cargo and the Orbiter.

An overhead bridge crane will be used to transfer the cargo elements from their transporter into the integration cell. Suitable unique sling and handling devices will be provided by the contractor responsible for the element. An elevator will be available for placing support equipment (SE) at the appropriate levels in the cell.

Checkout of the cargo while in an integration cell is accomplished using SE trailers which will be positioned in rooms provided adjacent to the building. The facility shall provide secure accommodations for the SE trailers including parking, electrical power and communication links in an enclosed room or annex to the facility located as close to each integration cell as possible. An added checkout capability will be provided through communication interfaces which tie the SPIF to spacecraft control centers in other facilities.

After prelaunch preparations in the SPIF are completed, the entire integrated cargo stack will be transferred to the MMSF canister with a self-propelled Payload Handling Fixture (PHF). Figures 3.1.1–1 through 3.1.1–3 depict conceptually how this transfer will be accomplished. The PHF will be moved from its stored position in the canister airlock to the integration cell and interfaced with the cargo (Figures 3.1.1–1 and 3.1.1–2). At the same time, the canister will be moved off its transporter using the 300 ton high bay bridge crane and onto an air bearing pallet. The air bearing pallet will move the canister into the canister airlock.

The canister will be positioned in its predetermined position and that portion of the canister which faces the transfer aisle will be cleaned. After the cleaning has been completed and the airlock space between the doors of the canister and the transfer aisle have been sufficiently evacuated of contaminants by the use of clean air, the doors of the canister will be opened. When the canister is ready to receive the cargo, the doors to the transfer aisle will be opened and the PHF will bring the cargo to the canister. The PHF will be positioned and the transfer of the cargo from the PHF into the canister will be completed (Figure 3.1.1–3).

Throughout the cargo transfer process, the mechanical interface between the cargo and the support rails, PHF, and the canister is provided by the standard STS payload attachment trunnion(s) which are an integral part of each cargo. All transfers from one interface to the other will be accomplished by transfering the trunnion(s) of the cargo to the support arms of the support rails, PHF, or canister. During the transfers, the final movements will be controlled "Vernier" type movements from fixed positions.

After the cargo trunnions' load is transferred to the canister, the PHF will be disconnected, withdrawn into the transfer aisle and the canister doors closed. The doors between the transfer aisle and the canister airlock will be closed and the canister moved to its transporter. The integrated cargo is transported to the RSS for installation into the Orbiter.

3.1.2 *Facility Functional Uses.*—Upon completion of this modification to the SMAB, functions related to the STS and Titan program will be performed in the three areas of the SMAB. These are:

(*a*) *East Low Bay.*—IUS Assembly and Checkout (not a part of this modification).

(*b*) *West Low Bay.*—SPIF for STS Cargo Integration/Deintegration.

(*c*) *High Bay.*—Titan Solid Rocket Motor Assembly (checkout and mating to the Titan T23C and T34D core and transporting of STS cargo).

The east low bay will be a secured clean area with associated airlocks and will have controlled access. The west low bay (SPIF) will be a secured clean area with associated airlocks and integration cells. The high bay will continue to be utilized as a Titan Solid Rocket Motor (SRM) assembly, checkout and mating area; however, under this modification, only east side cells will be used. The cargo integration function requires the northwest Titan solid motor stacking cell be modified for use as a canister airlock and the southwest stacking cell be modified to a holding cell in the SPIF. The MMSE canister/transporter will require access to the high bay for loading and unloading of the canister. (Pref. Fig. 3.1.2.1–1)

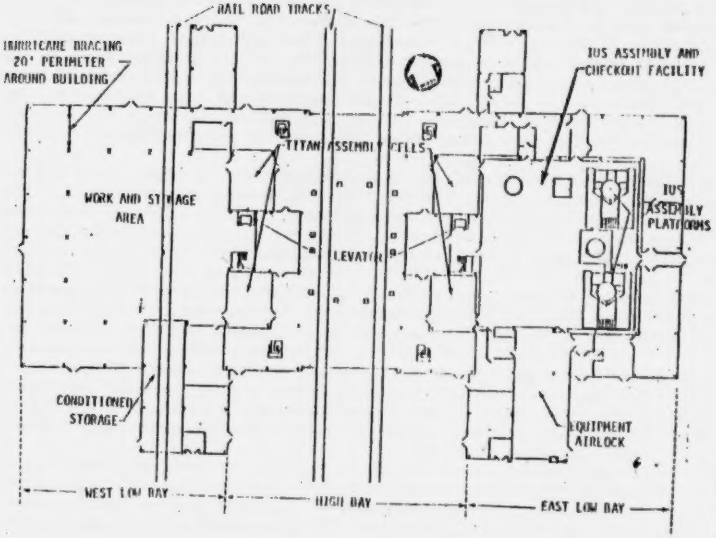

RAIL ROAD TRACKS
HURRICANE BRACING 20' PERIMETER AROUND BUILDING
IUS ASSEMBLY AND CHECKOUT FACILITY
TITAN ASSEMBLY CELLS
WORK AND STORAGE AREA
ELEVATOR
IUS ASSEMBLY PLATFORMS
CONDITIONED STORAGE
EQUIPMENT AIRLOCK
WEST LOW BAY
HIGH BAY
EAST LOW BAY

FIGURE 3.1.2.1-1 SMAB First Floor Layout
Plan View - Existing Facility

SD-YV-0034
13 December 1979

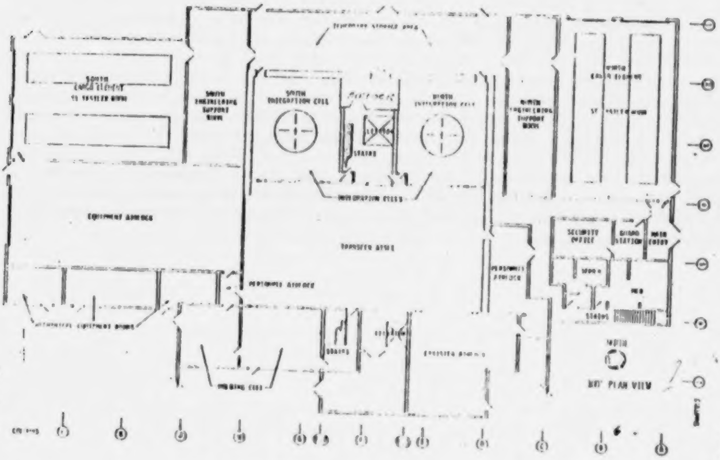

TEMPORARY STORAGE AREA
SOUTH CARGO ELEMENT
ST TESTER ROOM
SOUTH ENGINEERING SUPPORT ROOM
SOUTH INTEGRATION CELL
ELEVATOR
STAIRS
NORTH INTEGRATION CELL
NORTH ENGINEERING SUPPORT ROOM
NORTH CARGO ELEMENT
ST TESTER ROOM
INTEGRATION CELLS
EQUIPMENT AIRLOCK
TRANSFER AISLE
PERSONNEL AIRLOCK
SECURITY OFFICE
GUARD STATION
MAIN ENTRY
PERSONNEL AIRLOCK
MER
STAIRS
MECHANICAL EQUIPMENT ROOMS
STAIRS
NORTH
PLAN VIEW

FIGURE 3.1.2.2-1 SPIF Ground Floor Layout

24

SD-YV-0034
13 December 1979

ATCH 24
1A

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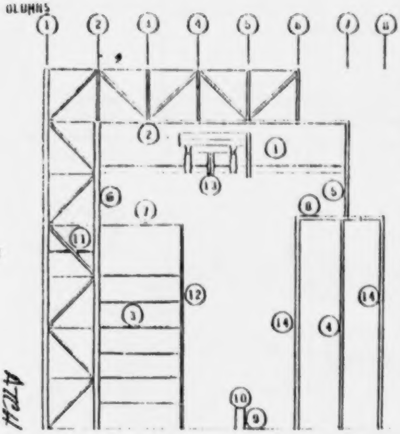
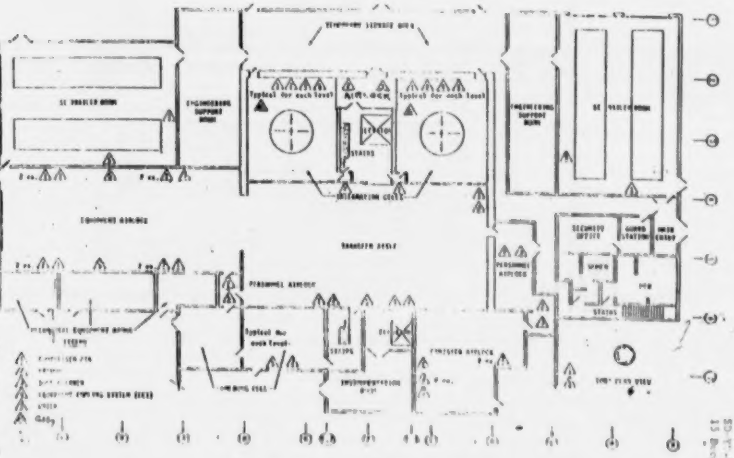

COLUMNS
1
2
3
4
5
6
7
8
1
2
3
4
5
6
7
8
9
10
11
12
13
14

① 50-TON CRANE (CAB REMOVED; TRAVEL MODIFIED; FLOOR CONTROLS)
② CLEAN AREA CEILING - EL 220 FT.
③ INTEGRATION CELL
④ CANISTER AIRLOCK
⑤ NEW CLEAN AREA WALL - COL LINE 7
⑥ NEW CLEAN AREA WALL - COL LINE 2
⑦ INTEGRATION CELL CEILING WITH LIDS EL 100 FT.
⑧ CANISTER AIRLOCK CEILING - EL 183 FT.
⑨ TRANSFER AISLE, INTEGRATION CELL, CANISTER & EQUIPMENT AIRLOCK, FLOOR EL 100 FT.
⑩ ENTRANCE TO TRANSFER AISLE FROM PERSONNEL AIRLOCK
⑪ ORBITER AVIONICS SIMULATOR
⑫ INTEGRATION CELL DOORS
⑬ CRANE HOOK HEIGHT - 100FT.
⑭ CANISTER AIRLOCK DOORS-COL LINES 6 AND 8

ATCH 2A

FIGURE 3.1.2.2-2 Elevation of SPIF Clean Room

783


Typical for each level
AIRLOCK
Typical for each level
STAIRS
INTEGRATION CELLS
ENGINEERING SUPPORT ROOM
ENGINEERING SUPPORT ROOM
EQUIPMENT AIRLOCK
TRANSFER AISLE
PERSONNEL AIRLOCK
PERSONNEL AIRLOCK
SECURITY OFFICE
GUARD STATION
MAIN ENTRY
STAIRS
Typical for each level
STAIRS
INSTRUMENTATION ROOM
CANISTER AIRLOCK
LEGEND

ATCH ~~3A~~ 1A

FIGURE 3.2.7.3-1 SPIF - Mechanical Layout

13 December 1979

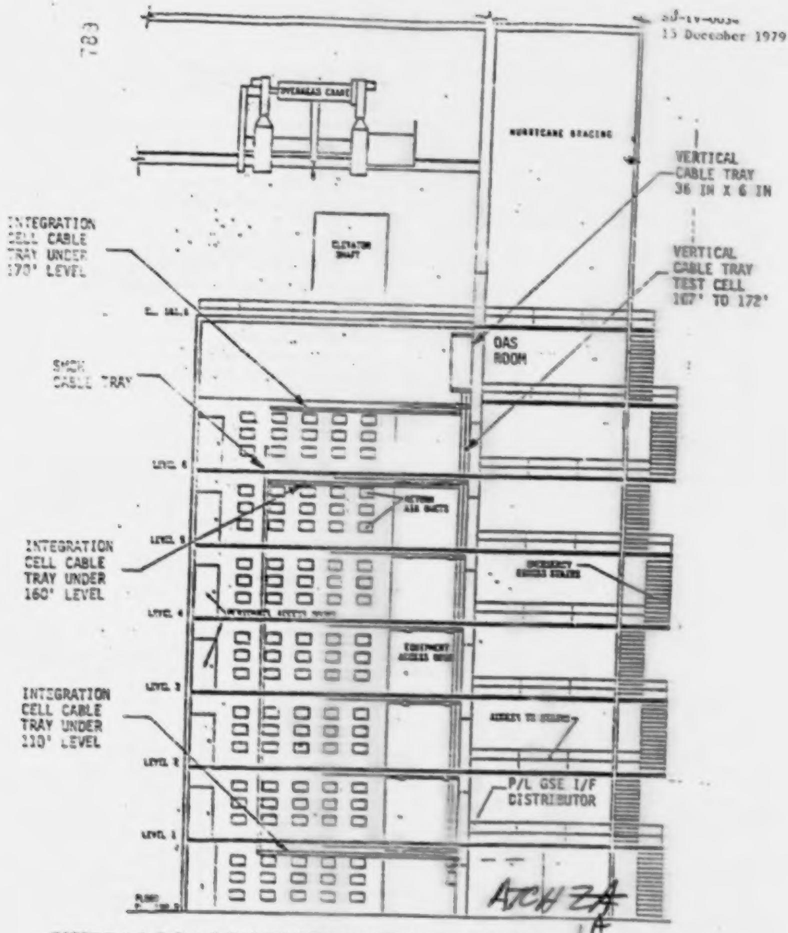

OVERHEAD CRANE
HURRICANE BRACING
VERTICAL CABLE TRAY 36 IN X 6 IN
VERTICAL CABLE TRAY TEST CELL 167' TO 172'
INTEGRATION CELL CABLE TRAY UNDER 170' LEVEL
ELEVATOR SHAFT
OAS ROOM
SMCH CABLE TRAY
LEVEL 6
RETURN AIR DUCTS
LEVEL 5
INTEGRATION CELL CABLE TRAY UNDER 160' LEVEL
EMERGENCY EGRESS STAIRS
LEVEL 4
EQUIPMENT ACCESS DOOR
LEVEL 3
INTEGRATION CELL CABLE TRAY UNDER 110' LEVEL
ACCESS TO STAIRS
LEVEL 2
P/L GSE I/F DISTRIBUTOR
LEVEL 1

FIGURE 3.2.8.2.4-6 OAS TO INTEGRATION CELL CABLE TRAYS ELEVATION

ATTACHMENT 2

Design Schedule

A-E Notice to proceed	Jan. 10, 1980
Cost estimate	Feb. 29, 1980
30-Percent design package	Mar. 19, 1980
30-Percent design review conference	Apr. 8-10, 1980
60-Percent design package	June 2, 1980
60-Percent design review conference	June 17-19, 1980
95-Percent design package	Aug. 1, 1980
95-Percent design review conference	Aug. 19-21, 1980
100-Percent design package	Sept. 19, 1980
Ready to advertise	Oct. 10, 1980

ATTACHMENT 3

STATEMENT OF WORK FOR PER KSC STS SECURITY MODIFICATIONS FOR DOD MISSIONS PCN 82907

1. PURPOSE

To define the technical services required to prepare a Preliminary Engineering Report (PER) for various Facility and Facility systems at the John F. Kennedy Space Center, Florida, in support of the Space Transportation System (STS) Security requirements.

2. SCOPE

This test requires the PER to be at least a 30% design package. The areas of concern are the Launch Control Center (LCC), Orbiter Processing Facility (OPF), Vehicle Assembly Building (VAB), Mobile Launch Platforms (MLP 1 & 2), Launch Pads A & B, and Shuttle Landing Facility (SLF) at Launch Complex 39, and Headquarters Building and Vertical Processing Facility (VPF) in the Industrial Area.

The Architect Engineer (A/E) will be required to provide all field investigations, studies, calculations, drawings, outline specifications, and detail cost estimates necessary to develop the complete PER. The PER shall also have the capability of being expanded to 100% design without technical or philosophical delays.

2.1 GENERAL

2.1.1. This PER subsequent design is in support of DOD requirements for STS missions launched from the Kennedy Space Center (KSC). The PER must show the NASA/KSC responsibility for design, construction and check-out for the facility modifications in support of the requirements.

2.1.2. The PER must also reflect the responsibility for operations and maintenance of the security related facilities and facility systems so as not to lose configuration control during the project implementation.

2.2 MAJOR ELEMENTS

2.2.1. The PER will encompass the following major elements of design: door alarms, personnel access systems, acoustic security, physical security, visual security, emanating control and facility modifications required to support communications and data processing system installation.

2.2.2 The guidelines for preparation of the PER is NASA Management Instruction NMI 7330.2A dated August 8, 1975, and all effective revisions.

2.2.3 The criteria for PER preparation is the "KSC STS Security Requirements/Implementation Plan for DOD Missions", latest edition.

2.3 DETAILED ELEMENTS

2.3.1 The Contractor will consider alternate designs and construction methods/phrasing of accomplishing the modification and construction requirements and make recommendations as to the one that best meets total requirements.

2.3.2 Safety, reuse of existing equipment and materials, reliability and minimum operational times for present Shuttle operations are to be the prime considerations in these studies and PER.

2.3.3 The Contractor will be furnished Space Shuttle operational and flow plans for use in layout and equipment planning.

2.3.4 The vehicle, configuration, and system interfaces to be considered in this effort will be furnished to the Contractor.

2.3.5 This PER will consider all interfaces between facilities covered in this work statement and with existing operational and support systems as applicable.

2.3.6 The Contractor will prepare detailed construction schedules for the PER showing all constraints.

2.3.7 An environmental assessment shall be developed for inclusion in the Preliminary Engineering Report.

2.3.8 Baseline requirements will be frozen at the time of the 40% PER review. Programmatic changes impacting the PER will be incorporated only by mutual agreement of the Government and Contractor.

3. GOVERNMENT FURNISHED DOCUMENTATION

3.1 All basic construction (Apollo) and all Shuttle modification drawings are available in the Engineering Documentation Center (EDC) at KSC on microfilm. Full-size prints may be ordered by EDC personnel if required as well as microfilm prints.

3.1.1 Additional installation drawings:

97K07667—LC-39 MLP No. 1 Mechanical & Electrical Installation, Sheets 77 and 79.

75M05121—Launcher-Umbilical Tower Mechanical & Electrical Installation, Sheets 69, 74, 75, 220, 221, 222, & 223.

ATTACHMENT 4

On February 22, 1980 an A/E firm was contracted to develop a PER and 30 percent design document. The structural solutions and associated costs for satisfying, the DOD security requirements are to be identified in the PER which is in preparation by the A/E firm.

PROJECT STATUS

This PER and 30% design effort will be completed by May 5, 1980. A proposed schedule for completing the development of the PER and 30% design effort is presented in Figure 1.1. A summary of the project milestones and target completion dates follow:

Milestone:	*Completion date*
1. 40 percent submittal and review	Mar. 3–5, 1980
2. Complete study and 30 percent design for modifications at the LCC.	Mar. 24, 1980
3. Complete study and 30 percent design for modifications at the OFF.	Mar. 30, 1980
4. Complete study and 30 percent design for modifications at the VA. .	Mar. 30, 1980
5. Complete study and 30 percent design for modifications at the MLF.	Apr. 7, 1980
6. Complete all data gathering and field work	Apr. 7, 1980
7. Complete study and 30 percent design for modifications at the LP, VPP and all other facilities.	Apr. 15, 1980
8. 90 percent submittal and review	Apr. 16–18, 1980
9. Final rework of PER and 100 percent submittal	May 3, 1980

1.5 DOCUMENTATION

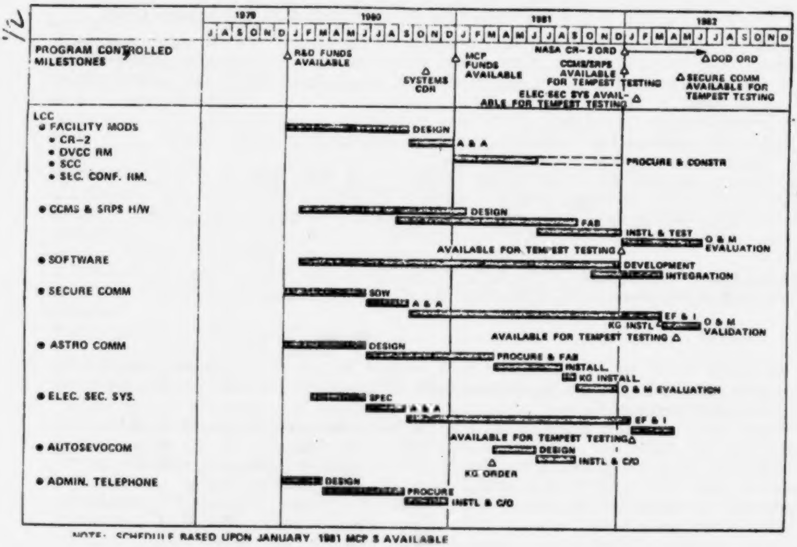
The following NASA and DOD documents were utilized in the preparation of this PER:

1. KSC-STD-E-0007, Design for installation of Electrical power Cables.
2. KSC-STD-E-0011, Electrical Power Receptables.

KSC STS SECURITY REQUIREMENTS/IMPLEMENTATION PLAN FOR DOD MISSIONS - SCHEDULE

DEC 79

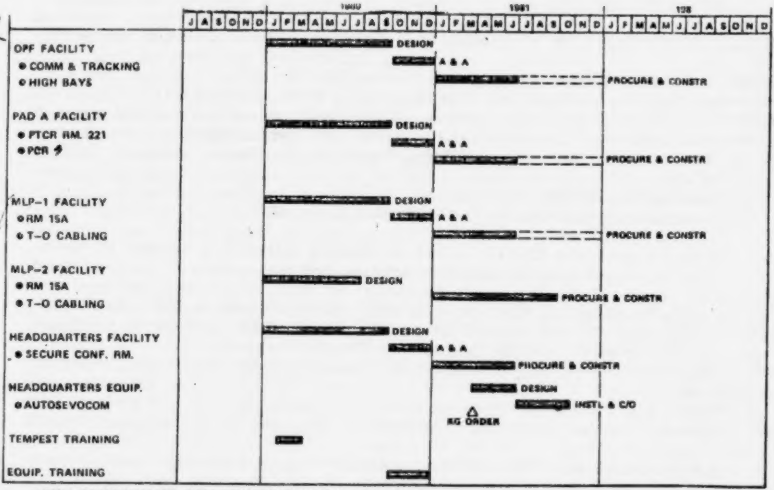
1/2



NOTE: SCHEDULE BASED UPON JANUARY, 1981 MCP $ AVAILABLE

ATCH 5

2/2



NOTE: SCHEDULE BASED UPON JANUARY, 1981 MCP $ AVAILABLE

DECEMBER 13, 1979

ATCH 5

ATTACHMENT 7

V32 SRB RETRIEVAL AND DISASSEMBLY FACILITY

Estimated construction cost based on 60-percent design (February 1980)

Item:	*Estimated cost in millions*
Site developemnt	$1.6
Disassembly Building	4.8
Initial wash facility	2.2
Wharf and landing ramp	3.2
General contractor requirements	0.4
Design contingency	2.5
Total estimated construction cost to October 1981	14.7
SIOH	.8
Construction contingency	.8
Title II A–E Services	.2
CWE	16.5

Question. Your justification for this project is a mystery. I thought NASA was going to fund all requirements at KSC. What prompted this requirement and why is DOD funding it?

Show how spending $22 million will "reduce the cost of acquiring the initial DOD shuttle capability" and "reducing operations costs."

Answer. Air Force funding for this project is totally consistent with the provisions of the NASA/DOD Memorandum of Understanding (MOU) on Management and Operation of the Space Transportation System. The specific provisions which apply here have been in effect since the January 1977 MOU; excerpts from paragraph 4.3 follow:

". . . Each agency is responsible for providing its own payload facilities external to the launch pad area . . ."

". . . DOD and NASA will agree on DOD peculiar security provisions required at NASA facilities. Such provisions will be subject to negotiated reimbursement . . ."

Similar provisions exist in the March 1980 MOU.

Consequently, we have a clear responsibility to fund this project.

Air Force Studies show that using an off-line process for physical integration of Defense payloads into the Shuttle has several advantages relative to our previously planned "factory-to-pad" approach at the Kennedy Space Center. These include:

(a) Reduced operational constraints.

(b) Lower acquisition cost for the DOD Shuttle capability.

(c) Reduced operating costs.

As the NASA plans for Shuttle launch processing matured, a number of operational constraints became apparent which limited our planned factory-to-pad payload processing flow. The most significant of these constraints include:

(a) Payload processing time exceeds the time available on the launch pad, thus delaying the Shuttle launch. Serial time on the launch pad is projected to cost $350K per day (FY75$) due to lost Shuttle revenues.

(b) Assembly and fueling of some DOD spacecraft cannot be performed on the launch pad.

(c) There is not sufficient floor space at the launch pad for the ground support equipment needed to conduct pre-launch checkout of the spacecraft and its upper stage.

(d) No provisions exist for deservicing classified spacecraft following a launch abort.

Cost estimates have been made for total acquisition costs and for operations costs for payload launch processing. Acquisition cost savings of $25.6M are projected based on reduced requirements for interface verification equipment resulting from implementing the Shuttle Payload Integration Facility (SPIF). Operating cost reductions averaging approximately $5M per year are expected during the early years of operations at the eastern launch site. Savings in the late 1980s could range from $20M to $50M per year depending on the total launch traffic. This is based on reducing the expensive serial time used on the Shuttle launch pad, and by eliminating the costs associated with operating multiple sets of portable (trailorized) interface verification equipment.

Question. Your record on cost estimates for the STS has not been good. You had not started design on this project when it came to the Hill. How confident are you in this estimate?

Answer. The project is now 35% designed and the current working estimate is within the programmed amount. Further, with the exception of the Vandenberg Shuttle launch pad, all other Shuttle projects have been bid within the programmed amount.

SPACECRAFT INTEGRATION FACILITY/SECURITY MEASURES

Question. Why do you need a separate launch control facility?

Answer. The Air Force is not providing a separate launch control facility, but is simply making modifications to the NASA facilities at Kennedy Space Center (KSC) which will enable classified DOD missions to be launched without a compromise of classified information.

The security measures in the SPIF and the KSC facilities are similar in nature to those being done at the Johnson Space Center, although of a lesser scope. They include:

Control of personnel access.
Restricted visual access.
Soundproofing.
TEMPEST protection for both conducted and radiated eminations.

Some or all of these—as needed—will be in the following facilities:

Shuttle Payload Integration Facility.
Launch Control Center.
Orbiter Processing Facility.
Vehicle Assembly Building.
Mobile Launch Platform.
Launch Pads.
One conference room in KSC Headquarters.

INTEGRATION FACILITY FOR AVIONICS SYSTEMS TESTING (IFAST), EDWARDS AFB

Question. What is the status of facilities used by NASA for the space shuttle? Could they be used for this project?

Answer. Approximately $2 million of NASA space shuttle facilities are at Edwards AFB and consist of a hangar 150 feet long by 150 feet wide by 60 feet high, a mate-demate device which is kept outdoors, a towway, and eight trailers 10 feet wide by 50 feet long. The location of these facilities would not provide the line of sight access to the aircraft activity on the runway required for the avionics integration simulation. In addition, these facilities are required to be maintained for a secondary landing site at Edwards AFB for all shuttle operations. There were no environmentally controlled IFAST simulator type facilities built for the NASA space shuttle mission at Edwards AFB.

CLINIC/DENTAL CLINIC, HANSCOM AFB, MASS.

Question. This is an extremely large and expensive facility for the military population supported. Provide additional details on exactly what will be built (number of DTRs, etc.) and how the requirements are justified?

Answer. A 5-year projection is used when planning military medical facilities. The active duty strength served and the authorized facility staffing are obtained for the projected end position, which in the case of fiscal year 1981 projects is 4th quarter, fiscal year 1984. The ratio of the projected active duty population served to the current active duty population served is then used to adjust the current active duty and dependents of active duty work load to the 4th quarter, fiscal year 1984 end position. Of special note is the fact that the work load figures used do not include any of the current retired or dependents of retired/deceased work load. After projecting the work load to fiscal year 1984, a factor of 5 percent is added to these figures to provide for care of retired and dependents of retired/deceased. These adjusted work load figures, along with fiscal year 1984 authorized staffing, are then used to determine the scope requirements for the facility.

The DOD space planning criteria is contained in DODI 6015.17, "Technical Procedures and Criteria for Planning and Acquisition of Military Health and Medical Facilities." The development baseline for this criteria is the projected work load and staffing as indicated above. The level of work load will determine the scope required to support each functional area. For example, a projected work load of 20,000 outpatient visits per year in Medicine Clinic would generate six doctor's offices, associated exam rooms, treatment rooms, utility rooms, waiting, toilets, etc., per the criteria. The authorized staffing would then be used to provide adequate administrative space for the support staff, again in conjunction with the DOD criteria. The above process is used for each functional area and the sum of the functional areas equals the total facility space requirements.

A synopsis of the major functional areas is as follows:

Ten Dental Treatment Rooms are provided to serve an active duty population of 1900–2000 (5 general dentists and 2 preventive dentistry stations).

Seven clinic work stations in Primary Care to support 5 physicians and 2 physician extenders.

One emergency room with supporting clinic spaces.

A 970 net square foot pharmacy to handle 45,700 prescriptions per year.

Two diagnostic X-Ray rooms to handle 11,300 films per year.

A four-work station laboratory to perform 24,300 lab procedures per year.

A Bioenvironmental Enginering Service to support 1 officer and 7 technicians.

3,500 net square feet of Materiel Services space, including Central Sterilization.

Approximately 2,500 net square feet of mechanical and electrical support space.

Administrative space to support 22 personnel.

This is the process which was used to determine the 40,400 gross square feet of building required to support the projected active duty population at Hanscom AFB.

ADDITIONAL INFORMATION/CLARIFICATION REQUESTED

Question. What is dentist-Patient ratio?

Answer. A ratio of dentist/provider to population served is not used except as a gross overall planning factor. Detailed dental facility planning uses the DOD dental facility sizing criteria, which includes a myriad of factors. Essentially, the major considerations are: the beneficiary population served and the dental treatment that population drives, historical workload experience, projected workload factor and any unique mission requirements a facility must meet. The following process was used as per the 21 Jun 79 DOD "Criteria for Construction of DOD Dental Facilities".

Active Duty population, 1,865 on base; 567 geographically separated units; total 2,432.

Active duty population, 2,432 × 24.0 procedures equals 58,368 procedures/year.

Dependents of Active Duty population, 4,200 × 0.24 equals 1,008 procedures/year.

Subtotal, 59,376 procedures/year.

Maximum allowable procedures for retired and dependents of retired, 2,969 (5 percent of 59,376).

Retired population, 4,493 × 2.40 equals 10,783 procedures/year.

Dependents of Retired population, 6,741 × 0.24 equals 1,618 procedures/year.

Subtotal, 12,401 procedures/year (Must use 2,969 since 12,401 exceeds maximum allowance).

Equates to 5,195 procedures/month.

Manpower Requirements, 5,195 procedures/month equals 6 dentists.

Preventive Dentistry Technicians/Provider Team: Ratio, 1 tech/1,515 active duty equals 2,432 ÷ 1,515 equals 2 technicians.

Provider Team: 5 general dentists; 1 specialist (R9826); 2 hygienists.

Non-Teaching Facility; Support Staff Ratio; 5 general dentists; 1 specialist; 6 dentists × 2.5 equals 15.

Total Staff: 5 general dentists; 1 specialist; 2 hygienists; 15 support staff; 23 total personnel.

DTR Factors: 5 general dentists $\times$ 1.5 $=$ 7.5; 1 specialist $\times$ 2.0 $=$ 2.0; 2 hygienists $\times$ 1.0 $=$ 2.0; Total, 11.5 $=$ 12 DTR's.

The Hanscom AFB composite medical facility project proposed was originally approved for design on 18 November 1975 and was scheduled for the FY 78 construction year. Deferral of the project caused adjustments in the number of dental treatment rooms proposed from 13 to the present 10 because of changes in space planning criteria and in the beneficiary population served. Any change in facility scope at this stage of design would result in design breakage cause excessive delays and increase costs both in design and construction dollars. To increase the number of dental treatment rooms from 10 to 12 at this point, therefore, would create unwarranted adverse impact on the project.

Question. (Space Trans. Sys.—Solid Rocket Booster Disassembly Facility, Port Hueneme, California, p. —) Provide additional details on what you plan to build to include more detailed cost estimates.

Answer. The current project scope is as follows (reflects 60 percent design):

Initial wash facility provides an area of approximately 12,400 square feet of enclosed space for scrubbing, rinsing, and drying operation.

The disassembly building is steel framed structure containing approximately 35,000 square feet of high bay area and a support area of low bay construction containing approximately 13,400 square feet.

New wharf provides approximately 48,400 square feet of work area including a 25′ wide × 150′ long slip to conduct the retrieval and rinsing operations of the SRB.

The current construction cost estimates, based on 60 percent design, are as follows:

Item:	*Estimated cost (millions)*
Site development	$2.24
Disassembly building	6.72
Initial wash facility	3.08
Wharf and landing ramp	4.48
Total	16.52

Question. (Marksmanship Training Facility, Lackland AFB, Texas). The justification for this project is not clear. If you have to go to the live fire range to fire, what difference does it make where you do the training? Why can't existing facilities be used?

Answer. Students have several sessions of premarksmanship training totalling 5½ hours. In more than one session students move from pre-marksmanship to the live fire range and back to pre-marksmanship for weapons cleaning. Trainees normally must march from one area to the other, a one-way distance of about three miles. This is about a one hour walk. Tremendous numbers of training and instructor man hours are lost annually in these multiple movements. In 1979, 87,933 students went through firing training. In 1981 we estimate over 100,000 students will go through this training.

The buildings now used for pre-marksmanship training are World War II wooden structures in advanced stages of deterioration. They can be more accurately described as shacks. In some cases, the foundations of the buildings have actually shifted. None can be economically upgraded to any reasonable standard.

CANCER TREATMENT FACILITY, LACKLAND, TEXAS

Question. You have just spent $100 million to upgrade Wilford Hall. Why wasn't this requirement accommodated?

Answer. This addition to the radiation therapy for the linear accelerator equipment was considered during the early planning of the fiscal year 1976 project. However, at that time, deep therapy radiation technology was in its infant stages, and the Air Force elected to defer the project. Technological advances have been rapid for this project, and the linear accelerator is now recognized as the preferred equipment for deep therapy cancer treatment.

Question. Can't you use existing space?

Answer. This addition will be adjacent to, and connected with, the existing Cobalt 60 Radiation Therapy Service in order to utilize the existing support and administrative space. When planning was first initiated on this project, existing locations within the medical center were explored but were rejected because of the following reasons: (1) the construction of necessary wall thickness for this equipment was not possible within existing space; (2) higher than existing ceiling height is required; and (3) major structural support columns interfered with room sizing necessary for the equipment. The location selected proved to be the most cost-effective when compared to the extensive alteration that would have been required within the existing structure.

ADDITIONAL INFORMATION/CLARIFICATION REQUESTED

Question. You have just spent $100 million to upgrade Wilford Hall. Why wasn't this requirement accommodated? What is the status of the requirement?

Answer. Manufacturing and delivery require 12 to 16 months lead time. Procurement action began the week of 1 Apr 80. Equipment delivery is projected for Jun 81 to coincide with the construction phasing plan for equipment installation.

HEATING PLANT/OIL BACKUP, LACKLAND AFB, TEX.

Question. a. Are you looking at heat sources other than gas/oil?

Answer. The project will provide a dual fuel, gas with oil standby capability. This is a standard boiler fuel configuration. Therefore, no other fuel source is being considered.

b. What size boilers now exist?

Answer. There are 25 relatively small boilers included in this project, with the individual plant sizes varying from 5.0 MILBTU to 8.7 MILBTU.

HEATING PLANT/OIL BACKUP, SHEPPARD AFB, TEX.

Question a. Are you looking at heating fuels other than gas/oil?

Answer. The project will provide a dual fuel, gas with oil standby capability. This is a standard boiler fuel configuration. Therefore, no other fuel source is being considered.

b. What size are the existing boilers?

Answer. There are 23 relatively small boilers included in this project, with individual plant sizes varying from 5.8 MILBTU to 59.7 MILBTU.

NEW AIRCRAFT BEDDOWN FACILITIES, ELMENDORF AFB, ALASKA

Question. What new aircraft is programmed for this site?

Answer. Two E-3A aircraft are programmed to be assigned to Elmendorf AFB, Alaska.

Question. Will this be in addition to aircraft already there?

Answer. These two aircraft will be in addition to the aircraft already assigned there.

MUNITIONS STORAGE SECURITY IMPROVEMENTS, M'CHORD AFB, WASH.

Question. Are nuclear weapons stored here? Is this project to upgrade their security?

Answer. [Deleted.]

Question. How long have nuclear weapons been stored here?

Answer. [Deleted.]

Question. Why wasn't this project included in the upgrade program of several years ago?

Answer. [Deleted.]

Question. Are we retaining the multicubical storage structures?

Answer. [Deleted.]

MILITARY AIRLIFT COMMAND, NORTON AFB, CALIF.

Question. a. Provide a 1391 for the project.

b. Is the cost estimate good?

c. Could the project be carried out in fiscal year 1981?

Answer. A copy of the DD Form 1391 for this project is attached. The cost estimate is valid and acquisition could start in fiscal year 1981.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Land acquisition	LS			$9,152
Total, request				9,152

10. Description of proposed construction.—Land Acquisition, including real estate interests in fee or restrictive easements, to establish necessary expanded clear zones as part of the Air Installation Compatible Use Zone program within the Continental United States. Provides expanded clear zones extending to 3,000 feet from runway thresholds (at the ends of the runways).

Requirement.—125.4 Acres.

Project: To acquire in fee or restrictive easement the necessary land interest for expanded clear zones at the ends of the runway.

Requirement.—As part of the Air Installation Compatible Use Zones (AICUZ) program, expanded clear zones have been delineated and identified for property rights acquisition to prevent development in this high accident potential area.

Current situation.—Expanding developments accompanying recent population growth in urban areas have resulted in progressive encroachment upon Air Force installations. The Department of Defense is giving priority attention to protecting the operational capability of airfields by acquiring necessary interests in land around affected installations. When this program started, 64 of the 86 CONUS bases subject to AICUZ did not have expanded clear zones under Air Force control. Acquisition of clear zones at nine bases has been accomplished by 10 USC 2672 minor land acquisition authority. Of the remaining 55 bases, 45 are being accomplished from 1980 and prior programs. This request will satisfy expanded clear zone land requirement at one location in this program.

Impact if not provided.—Continued urban encroachment upon Norton Air Force Base, California, which has high accident and noise potential. This could result in the ultimate possibility of curtailment or relocation of flying operations to installations where land use is controlled.

DENTAL CLINIC, POPE AFB, N.C.

Question. Justify the requirement for 16 DTRs.

Answer. Eighteen dental treatment rooms are planned to meet the dental mission requirements of Pope AFB, not sixteen as erroneously shown on the 1391. This requirement is derived using the DOD dental facility sizing criteria issued 21 Jun 79 and to meet the dental/oral health care requirements of the active duty beneficiary population. The facility was planned for the 3,695 active duty beneficiaries located at Pope AFB and will be staffed with nine dental officers, three preventive dentistry technicians and 21 ancillary, administrative and paraprofessional personnel.

Question. Why can't you share the facilities at Fort Bragg?

Answer. The dental facility at Fort Bragg was programed, planned and designed in 1976 to replace the grossly inadequate dental facilities in several locations. It was constructed to meet the dental health requirements of the Army active duty beneficiaries located there. The new 78 DTR dental facility nearing completion has no excess capability available.

ADDITIONAL INFORMATION/CLARIFICATION REQUESTED

Question. What is dentist-patient ratio?

Answer. A ratio of dentist/provider to population served is not used except as a gross overall planning factor. Detailed dental facility planning uses the DOD dental facility sizing criteria, which includes a myriad of factors. Essentially the major considerations are: the beneficiary population served and the dental treatment that population drives, historical workload experience, projected workload factors and any unique mission requirements a facility must meet. The following process was used as per the 21 Jun 79 DOD "Criteria for Construction of DOD Dental Facilities".

Active Duty population, 3,832 × 24.0 procedures equals 91.968 procedures/year.

Dependents of Active Duty population, 5,412 × 0.24 procedures equals 1,299 proc/year.

Subtotal, 93,266 procedures/year.

Maximum allowable procedures for retired and dependents of retired 4.663.

Retired population, 2,000 × 2.40 equals 4,800 procedures/year.

Dependents of Retired population, 3,000 × 0.24 equals 720 procedures/year.

Subtotal, 5,520 procedures/year.

Total allowable procedures, 93,266 + 4,663 equals 97,292 procedures/year. Equates to 8,161 procedures/month.

Manpower Requirements: 8,161 procedures/month equals 9 dentists.

Preventive Dentistry Technicians/Provider Team: Ratio, 1 tech/1,515 active duty, 3,832 ÷ 1,515 equals 3 technicians.

Provider Team: 6 general dentists; 3 specialists; 3 hygienists.

Non-Teaching Facility: Support Staff Ratio, 6 general dentists; 3 specialists equals 9 dentists × 2.5 ancillary/provider equals 23 total support staff.

Total Staff: 6 general dentists; 3 specialists; 3 hygienists; 23 support staff equals 35 total personnel.

DTR Factors: 6 general dentists × 1.5 = 9.0; 3 specialists × 2.0 = 6.0; 3 hygienists × 1.0 = 3.0. Total, 18.0 = 18 DTR's.

Question. How far away is the new 78 DTR facility at Fort Bragg?

Answer. Over eight miles.

DENTAL CLINIC, SCOTT AFB, ILL.

Question. Justify the requirement for 38 DTRs.

Answer. All dental facilities are sized based on the active duty population to be served but also melding considerations of required and available staff, mission uniqueness and historical and projected workload experience. The 38 DTRs programmed for Scott AFB, Illinois will serve an active duty population of 6,750 and are required for modern dental practice. The existing 24 DTR facility comprises less than 45 percent of the area required for modern dental practice as delineated in the present DOD space planning criteria. The new facility will be staffed with 17 dental officers, 4 residents, 5 preventive dentistry technicians and 53 ancillary, administrative and paraprofessional personnel.

ADDITIONAL INFORMATION/CLARIFICATION REQUIRED

Question. What is dentist-patient ratio?

Answer. A ratio of dentist/provider to population served is not used except as a gross overall planning factor. Detailed dental facility planning uses the DOD dental facility sizing criteria, which includes a myriad of factors. Essentially, the major considerations are: the beneficiary population served and the dental treatment that population drives, historical workload experience, projected workload factors and any unique mission requirements a facility must meet. The following process was used as per the 21 Jun 79 DOD "Criteria for Construction of DOD Dental Facilities".

Active Duty population. 6,750×24.0 procedures equals 162,000 procedures/year.

Dependents of Active Duty population, 11,970×0.24 equals 2,873 procedures/year.

Subtotal, 164,873 procedures/year.

Maximum allowable procedures for retired and dependents of retired, 16,487 (10 percent of 164,873).

Retired population, 6,520×2.4 equals 15,648 procedures/year.

Dependents of Retired population, 15,000×0.24 equals 3,600 procedures/year.

Subtotal, 19,248 procedures/year (Must use 16,487 since 19,248 exceeds maximum allowance).

Total allowable procedures, 164,873+16,487 equals 181,360 procedures/year. Equates to 15,113 procedures/month.

Manpower Requirements: 15,113 procedures/month equals 16 dentists.

Preventive Dentistry Technicians/Provider Team: Ratio, 1 tech/1,515 active duty population, 6,750÷1,515 equals 5 technicians.

Provider Team: 6 general dentists; 10 specialists; 5 hygienists; 3 expanded duty technicians.

Teaching facility with 4 residents: Support Staff Ratio: 6 general dentists; 10 specialists; 4 residents; total, 20 dentists×2.5=50; 3 expanded duty techs× 1.0=3; Total Support Staff, 53.

Total Staff: 6 general dentists; 10 specialists; 5 hygienists; 3 expanded duty technicians; 53 support staff; 77 total personnel.

DTR Factors; 6 general dentists×1.5=9.0; 10 specialists×2.0=20.0; 5 hygienists×1.0=5.$; 4 residents×1.0=4.0; Total, 38.0 DTR's.

TRAINING AND OPERATIONAL FACILITIES, BEALE AFB, CALIF.

Question. Are shelters necessary for the TR–1? Why?

Answer. Yes. Shelters for the TR–1 are required to afford maximum protection against precipitation, condensation, foreign matter and extreme temperatures for the sensitive sensors and neoprene seals used in TR–1 aircraft.

These aircraft are essentially the same as the U–2, but have a different makeup as to wiring and sensors on board. The aircraft is different from normal aircraft in that it is a high-altitude aircraft and has a pneumatic sealing system that is designed to protect the internal parts and the pilot while it is airborne. As a result, when the aircraft is on the ground, this system does not provide the necessary protection from the elements for the sensitive internal wiring, sensors and other components.

We know this from our experience with the U–2. Exposure to the elements (rain, snow, wind and heat) results in deterioration in the internal wiring and sensitive components from introduction of moisture and dust into the aircraft system. Also, the aircraft are painted black and when exposed to the heat of the sun, the internal areas of the aircraft can become extremely hot. This can result in damage and deterioration to sensitive electronic equipment. The weather could also affect the aircraft and components which could have an adverse effect while airborne, being a high altitude aircraft, which could endanger the pilot as well as the aircraft. These aircraft are required to be sheltered per the technical data or criteria as established by the Air Force as a result of recommendation from the manufacturers of both aircraft and equipment components.

Without the required sheltering, the aircraft are subject to the danger of being degraded such that it could adversely impact of their capability to perform their intelligence gathering mission. This, in turn, could have serious consequences in maintaining the security of the United States.

Question. Are U–2s and SR–71s sheltered?

Answer. All SR–71s are sheltered at Beale. Although some U–2c models are parked on the ramp because of limited shelter space, the intent is to have all U–2s sheltered at Beale AFB as well.

AICUZ—BLYTHEVILLE AFB AR

Question. Provide a plan showing the area to be acquired?

Answer. Plan is attached.

Question. What is the basis of your estimate?

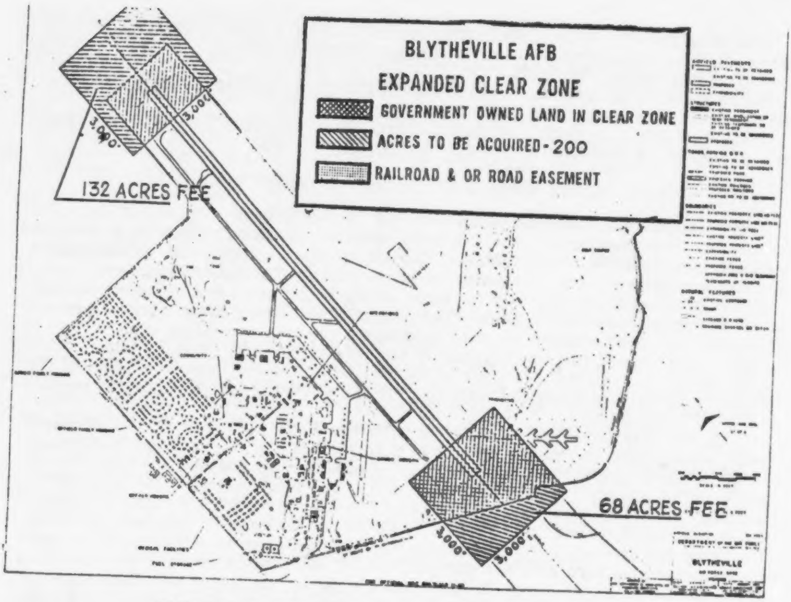
Answer. The estimate is based upon a real estate planning report prepared by the U.S. Army Corps of Engineers and dated 5 September 1978. The estimate is as of 31 December 1980.

Question. How many private landowners are involved?

Answer. Fifteen private landowners are involved.

Question. Have you tried zoning?

Answer. The required restrictions are so severe that zoning would effectively render the land economically useless. Thus the Air Force has not recommended that zoning be enacted nor has local government indicated a desire to do so.


BLYTHEVILLE AFB
EXPANDED CLEAR ZONE
▩ GOVERNMENT OWNED LAND IN CLEAR ZONE
▨ ACRES TO BE ACQUIRED - 200
▦ RAILROAD & OR ROAD EASEMENT
132 ACRES FEE
68 ACRES FEE
3,000
3,000
3,000
3,000
BLYTHEVILLE

CONVERT HEATING PLANT, FAIRCHILD AFB, WASH.

Question a. What is the size of this plant?

Answer. The total capacity of the plant is 450 MILBTU. After the conversion, there will be three approximate 110 MILBTU boilers on coal, and a fourth 110 MILBTU boiler on oil, to be used for standby purposes.

b. How much oil will be saved?

Answer. Based on recent consumption figures, approximately 45,000 barrels will be saved annually.

MUNITIONS STORAGE SECURITY IMPROVEMENTS, GRIFFISS AFB, N.Y.

Question. Does this project concern the storage of nuclear weapons?

Answer. [Deleted.]

Question. How long have nuclear weapons been stored here?

Answer. [Deleted.]

Question. Why wasn't this site included in the previous security upgrade program?

Answer. [Deleted.]

MUNITIONS STORAGE SECURITY IMPROVEMENTS, K. I. SAWYER AFB, MICH.

Question. Does this project concern the storage of nuclear weapons?

Answer. [Deleted.]

Question. How long have nuclear weapons been stored here?

Answer. [Deleted.]

Question. Why wasn't this site included in the previous security upgrade program?

Answer. [Deleted.]

STRATEGIC AIR COMMAND, LORING AFB, MAINE

Question. Senator Muskie has written asking about a certain project for Loring AFB. Is this a good project? What is the design status? Could you put it under contract in fiscal year 1981?

Answer. The construction of unaccompanied personnel housing (UPH) for lower grade enlisted airmen is required in that all existing are below DOD new construction standards. If the unaccompanied personnel housing project for 900 new spaces were added to the fiscal year 1981 MCP program, design could be completed by April 1981 with contract award in the 4th quarter fiscal year 1981. No design has been initiated to date. The alert dedicated runway is also a valid requirement. However, as design efforts have not started, it is extremely doubtful that this project could be designed and awarded during the fiscal year 1981 timeframe.

Question. Senator Cohen has submitted an amendment on Loring AFB (see attached). What is your position on his amendment?

Answer. The projects identified in Senator Cohen's amendment are valid Air Force requirements. However, we could only support the amendment in its entirety if offsets are not required. If required, offsets would defer equally urgent requirements at other installations.

AMENDMENTS INTENDED TO BE PROPOSED BY MR. COHEN VIZ:

On page 19, line 22, strike out "$7,450,000" and insert in lieu thereof "$27,365,000".

On page 31, line 11, strike out "$3,042,600" and insert in lieu thereof "$13,827,600".

On page 35, line 20, strike out "$1,822,356,000" and insert in lieu thereof "$1,828,816,800".

On page 37, line 10, strike out "$484,723,000" and insert in lieu thereof "$504,638,000".

On page 37, line 12, strike out "$619,690,000" and insert in lieu thereof "$639,605,000".

On page 37, line 17, strike out "$276,100,000" and insert in lieu thereof "$293,345,800".

Question. Senator Cohen's amendment involves the specific projects as shown in the attached extract from the Congressional Record. For each project, provide a form 1391, indicate the design status and indicate whether the project could be put under contract in fiscal year 1981.

Military construction, Air Force

[In thousands of dollars]

Project	*Cost*
WSA security system modifications	82,600.0
Communications facility 5000	210.0
Energy conservation package (4 buildings)	895.0
Dedicated alert runway	10,800.0
Energy monitoring and control system	610.0
Unaccompanied personnel housing (450 cap)	4,500.0
Fuel cell dock alterations	300.0

Family housing, defense

(Maintenance of real property)

Project	*Cost*
Rehabilitation of appropriated housing	$3,078.5
Overlay roads	298.4
Paint exterior trim	272.0
Replace boilers (Wyoming Circle)	--------
Replace boilers (Wells Drive)	26.3
Replace heating systems, Preque Isle	1,484.4
Paint exteriors on-base capehart	64.6
Repair sidewalks	150.2
Paint interiors	149.0
Repair off-base capeharts (4 projects)	518.9
Replace electrical "H" frames	45.0
Replace street lights	93.6
Rehabilitate baths/kitchen—on-base capehart	241.1
Paint exterior—off-base capehart	38.8

Family housing, defense

(Improvements of existing facilities)

	Cost
Upgrade/rep 400 wherry houses and garages	$9,681.0
Const. garages and vestibules for 114 off-base capeharts	1,104.0

Answer. A DD Form 1391 for each project shown in Senator Cohen's amendment except those currently in our fiscal year 1981 Military Construction Program (MCP) is provided. A list of the specific projects including the design status and estimated contract award date are shown below.

[Dollar amounts in thousands, fiscal years]

Item	Design status (percent)	Award date	Program amount [1]
WSA security system modifications [2]	2	1981	$4,100
Communications facility [2]	2	1981	200
Energy conservation package and EMCS [2]	2	1981	1,450
Dedicated alert runway	0	1982	11,400
Unaccompanied personnel housing	0	1981	4,350
Fuel cell dock alterations	0	1981	2,150
Improvements in existing family housing:			
Wherry—400 houses and garages	50	1981	9,681
Capehart—114 vestibules/garages	35	1981	1,084

[1] The programed amounts as shown above differ from that of Senator Cohen but reflect the Air Force's estimate.

[2] DD forms 1391 were included in fiscal year 1981 MCP submittal.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
(U) Prelaunch survivability—Phase I, construct alert runway	SY	300,000	$33.47	$10,040
Support work	LS			300
Subtotal				10,340
Contingency (5 percent)				517
Total, contract cost				10,857
Supervision, inspection, and overhead (5 percent)				543
Total, request				11,400

Description of proposed construction.—Project provides for relocation and reconfiguration of alert aircraft areas, and construction of new aprons, taxiways, ready crew, alert dedicated runway, and security systems for alert aircraft and crews. Project also includes relocation of security police and other base support functions. Project is phased to meet construction scheduling requirements for this large construction effort.

Project.—This project will permit repositioning the alert force to enable rapid reaction and safe launch of alert aircraft in the event of an enemy attack on the United States. Minimum aircraft launch time will be achieved by positioning all aircraft and crews in close proximity to the runway, and by constructing a second alert dedicated runway to permit simultaneous takeoff of both bomber and tanker aircraft.

Requirement.—[Deleted.]

Current situation.—[Deleted.]

Impact if not provided.—[Deleted.]

Elimination of Loring aircraft from the strategic response force would have a significant impact on the implementation of the SIOP.

Other.—In order to meet DOD safety criteria, it will be necessary to relocate some base support functions. Sufficient floor space exists, in the alert facility to be vacated and unused hangars, to accommodate displaced functions at minimum cost.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Unaccompanied enlisted personnel housing (450 PN)	SF	75, 150	$42. 45	$3, 190
Supporting facilities	LS			756
Electric	LS			(60)
Other utilities	LS			(171)
Site improvements	LS			(100)
Roads, walks, parking	LS			(175)
Demolition	LS			(250)
Subtotal				3, 946
Contingency (5 percent)				197
Total, contract cost				4, 143
Supervision, inspection, and overhead (5 percent)				207
Total, request				4, 350

Description of proposed construction.—Load-bearing walls and concrete footings, foundation, floor slab, and roof system. Includes bedrooms, baths, closets, lounges, central storage, laundry, and utility rooms.

Grade Mix.—450 E1–E4.

Requirement.—1,182 SF. Adequate: 0. Substandard: 2,006.

Deficit.—0.

Project.—Construct one building 450 PN, Unaccompanied Enlisted Personnel Housing (UEPH).

Requirement.—Adequate living quarters are required to properly accommodate enlisted personnel. These facilities must provide sufficient space and the degree of privacy necessary for proper rest, relaxation and individual well being. Modern and functional living quarters, which will attract and retain highly skilled enlisted personnel are essential for maintaining an effective, all-volunteer Air Force.

Current situation.—Adequate community assets for single enlisted personnel are scarce. There is no existing UEPH on base which meets the standard for new construction. Conditions within these facilities cause discomfort for occupants through interior lighting, poor environmental controls, and community latrines. Upon completion of this project, Phase 1 of 2, 38 percent of the UEPH requirement will meet the standards of new construction.

Impact if not provided.—Substandard living accommodation will continue to be a factor in low morale, reduced productivity, and dissatisfaction with Air Force life for unaccompanied enlisted personnel.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Alter maintenance dock to fuel cell repair dock	SF	28, 071	$8. 02	$225
Install oil/water separators	EA	2	50, 000. 00	100
Fire protection system	LS			1, 600
AFFF	LS			(500)
Pump station/water supply	LS			(1, 000)
Draft walls	LS			(100)
Exhaust fans	LS			25
Subtotal				1, 950
Contingency (5 percent)				98
Total, contract cost				2, 048
Supervision, inspection, and overhead (5 percent)				102
Total, request				2, 150

Description of proposed construction.—Convert an existing aircraft maintenance dock to a fuel cell repair dock by providing vapor and liquid fuel removal equipment, climate control equipment, drainage trenches, and oil/water separators. Includes necesary fire protection requirements.

Requirement.—56,142 SF. Adequate: 28,071 SF. Substandard: 0.

Specific purpose.—To provide a suitable facility to be used as an aircraft fuel cell repair dock.

Project.—Will alter an existing maintenance dock to provide a second fuel cell repair facility. This second facility will enable the base to accomplish fuel cell repairs on schedule even in inclement weather.

Requirement.—A second fuel cell repair dock is required at this installation because in the past year eight aircraft have had to be sent to depot due to a lack of fuel cell repair facilities at Loring AFB. This has resulted in a loss of eight aircraft months to the mission. During six months of winter, we are unable to work minor fuel cell problems because of fuel cell being tied up with major aircraft leaks. At times, we have five to eight aircraft down awaiting work.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Improve family housing	UN	400	$24,204	$9,681
Alterations	UN	400	11,825	(4,730)
Concurrent repair (O. & M. funds)	UN	400	12,379	(4,951)

Description of proposed construction.—Improve 400 Wherry units—work consists of floor plan revisions to increase livability and provide more efficient and functional room arrangements; modernization of bathrooms and kitchens; providing first floor bathrooms, family rooms, increased storage, and improved sound-proofing between units. Repair work consists of repairing stairways, electrical and heating systems; replacement of kitchen cabinets; providing new floor and wall finishes; and replacing garages.

Requirement.—Wherry units represent over 70 percent of the on-base housing at Loring AFB. The units are small and lack many amenities, conveniences and other livability features common to other military family housing. Accomplishment of this project will eliminate many of the inequities existing between these units and other on-base housing. Because of the extensive amount of work involved to bring these units up to the level of other housing at Loring and other AF bases, it is estimated that total costs will exceed $20,000/unit. The above costs represent a project average. Total costs will vary for different unit types, as follows:

	Per unit	
	ACF=0.90	ACF=1.0
Type A (60 each)	$20,800	$23,111
Type B (100 each)	25,600	28,444
Type C (40 each)	26,900	29,889
Type D (70 each)	21,000	23,333
Type E (50 each)	24,300	27,000
Type F (80 each)	26,400	29,333

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Garage construction:				
Sheathing and cedar shake siding	SF	24,000	$3	$72
Overhead doors	EA	114	500	57
Slabs on grade	SF	39,000	2	78
Carpentry	LS	Job		165
Roofing	SQ	400	150	60
Paving	SY	4,000	6	24
Drainage and earthwork	LS	Job		65
Electrical	LS	Job		130
Enclose front vestibules	EA	114	1,100	125
Construct rear entrance vestibules	EA	114	1,500	171
Construct privacy screens	EA	114	500	57
Total				1,004
Contingencies				20
SIOH (reimbursable)				21
SIOH (nonreimbursable)				14
Design				25
Total, estimated cost				1,084

Description of proposed construction.—Construct 114 garage spaces consisting of 29 buildings with all associated paving, site preparation, drainage and earthwork. Construct new rear entrance vestibules, enclosed existing front entrance ways and construct yard privacy screens.

Requirement.—

Project.—Will provide 296 SF of garage area and 40 SF of storage area for each of 114 Capehart Family Housing units. Will winterize each unit by vestibulizing each entrance and will create back yard privacy with screen dividers. The present composition of the Family Housing units is 32 company grade officers, 8 field grade officers and 74 enlisted grade family units.

Requirement.—There are no garages; those planned for original housing construction were never built. Vestibule type entrance ways are accepted as necessary for winter heat conservation and are standard in this severe winter area. Basic house design was deficient in omisson of vestibules. Privacy screens will enhance livability of bare back yards of row tenement housing with only one vast span of open space as now exists.

Current situation.—Parking is outdoors with chronic snow and ice interference. Heat loss is great with discomfort everytime a door is opened to the exterior due to absence of air lock effect of vestibules. Very little use is made of vast span back yard space. CATEX Group 1.

Additional information/clarification requested: Are the two improvement projects for existing Wherry and Capehart housing in the Fiscal Year 1981 program?

Additional information/clarification follows: Neither project is included in the Fiscal Year 1981 program. However, the Fiscal Year 1981 program does include a similar project for 165 different Wherry units.

Additional information/clarfication requested: Is the Fuel Cell Dock alteration project under design for Fiscal Year 1892?

Additional information/clarification follows: No. Project will be considered for Fiscal Year 1983 funding.

Question. Are any of the projects in Senator Cohen's list, the same as or part of projects included in the fiscal year 1981 Budget request for Loring AFB?

Answer. Yes. The WSA Security System Modifications, the Communications Facility, the Energy Conservation Package and the EMCS are all included in the Air Force's fiscal year 1981 Military Construction Program.

STRATEGIC AIR COMMAND, RICKENBACKER AFB, OHIO

Question. I thought you had announced that Rickenbacker AFB was being studied for closure. What is the status of that study?

Answer. On 26 April 1978, the Air Force announced a proposal to study the realignment of Rickenbacker AFB, Ohio. As a result of those studies, the Air Force announced on 29 March 1979, that operations at Rickenbacker AFB would be reduced with the inactivation of Strategic Air Command's 301st Air Refueling Wing. Strategic Air Command is currently in the process of reducing operations at Rickenbacker. The estimated annual cost avoidance resulting from this action will be approximately $20.2 million. Air National Guard and Air Force Reserve operations are not affected. Remaining at Rickenbacker are the Air National Guard's 121st Tactical Fighter Wing flying A–7 aircraft and the 160th Air Refueling Group flying KC–135s. The Air Force Reserve's 302nd Tactical Airlift Wing flying C–123 aircraft will also remain. The project we are requesting in this program was initiated with full knowledge of the planned realignment. It is required to support those forces remaining at Rickenbacker AFB.

STRATEGIC AIR COMMAND, VARIOUS LOCATIONS

Question. Provide separate 1391's for each site that will have ALCM or SRAM facilities.

Answer. A separate DD Form 1391 for each of the four ALCM locations and the one SRAM location is attached.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Air-launched cruise missile (ALCM) facilities—Phase II	LS			$9,433
Storage igloos	LS			(6,274)
Alter hangar for test facility	LS			(3,159)
Subtotal				9,433
Contingency (5 percent)				472
Total, contract cost				9,905
Supervision, inspection, and overhead (5 percent)				495
Total, request				10,400

Description of proposed construction.—

Storage igloos.—Concrete/steel arch igloos with concrete floor slab and foundations, double steel doors, and earth cover. All structural and electrical work required to provide safe and secure weapons storage area. Includes fencing, roads, sensor system support, security lighting, facility hardening, and explosive protection barricades. Necessary support and utilities. Remaining deficiencies will be constructed in a future military construction Program.

Alter hangar.—All mechanical, electrical and structured alterations to provide a functional test facility. Includes jet engine repair and assembly space; paint, machine, sheet metal, wood, pattern and welding shops; and administration. Necessary support and utilities.

Requirement	Required	Adequate	Substandard
Storage igloos (each)	11	2	0
Test and evaluation facility (square feet)	243,000	0	243,000

Project.—Provides for the construction and modification of facilities required to house and maintain the air launched cruise missile weapons system.

Requirement.—The ALCM system requires adequate facilities of proper size and configuration in which to receive, checkout, maintain, test, evaluate and store missiles, components, and support equipment within the weapons storage area (WSA).

Current situation.—Existing facilities are not adequate to beddown this new weapons system. The existing storage igloos are too small to house missile loaded pylons. No facility is available, without extensive modification, to provide a suitable follow-on test and evaluation facility. This project will complete current facility requirements to support externally loaded ALCM.

Impact if not provided.—The deployment of this vital strategic weapon system could not be accomplished in a timely manner nor in consonance with missile delivery and aircraft modification schedules. This could seriously impact the defense and security of the United States.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Air-launched cruise missile (ALCM) facilities	LS			$17,959
Integrated maintenance facilities	LS			(5,890)
Storage igloos	LS			(9,070)
Weapons control and inert storage facility	LS			(1,165)
Munitions and support equipment shop	LS			(1,144)
Mission data systems	LS			(203)
Road upgrade	LS			(487)
Subtotal				17,959
Contingency (5 percent)				898
Total, contract cost				18,857
Supervision, inspection, and overhead (5 percent)				943
Total, request				19,800

Description of proposed construction.—

Integrated maintenance facility.—Concrete foundations, floor and roof slabs, and walls; reinforced concrete frame. Includes space for missile maintenance, surveillance and inspection, and missile systems handling and testing; administration, supply, training, technical library, crew ready rooms, support and utilities.

Storage igloos.—Eight concrete/steel arch igloos with concrete floor slab and foundations, double steel door, and earth cover. All structural and electrical work required to provide safe and secure weapons storage area. Includes fencing roads, sensor system support, security lighting, and facility hardening. Necessary support and utilities. Remaining deficiency will be constructed in a future military construction program.

Weapons control and inert storage facilities.—All structural, electrical and mechanical alterations required to provide an efficient ordnance control facility. Pre-engineered metal building; concrete foundations and floor slab; metal skin; and structural steel frame and roof system. Includes weapon system control shipping, receiving and transfer area; weapon system crating, uncrating and storage space; and monorail, necessary support and utilities.

Munitions and support equipment shop.—Concrete foundations and floor slab; structural steel frame and roof system. Includes maintenance space for trailers, pylon and associated weapon system equipment; tool crib, storage, wash bay, administration, support and utilities.

Mission data facility addition.—Reinforced concrete foundations, floor and roof slabs and walls. Includes space for weapon system data processing equipment, storage and administration. Necessary support and utilities.

Road upgrade.—Construct new primary convoy route and upgrade existing convoy route with Portland cement or asphaltic concrete pavement capable of supporting the new trailer used for transporting the Air Launched Cruise Missile (ALCM). Includes modifications to the security fence and entrance to the weapons storage area to facilitate convoy movements into and out of the area. Necessary utilities and support.

Requirement	Required	Adequate	Substandard
Integrated maintenance facility (square feet)	32, 400	0	8, 280
Storage igloos (each)	11	0	0
Weapons control and inert storage facilities (square feet)	10, 531	0	0
Munitions and support equipment shop (square feet)	20, 280	5, 000	2, 131
Mission data facility (square feet)	4, 055	2, 423	0
Road (linear feet)	4, 800	0	3, 800

Project.—Provides for the construction and modification of facilities required to house and maintain the Air Launched Cruise Missile weapons system.

Requirement.—The ALCM system requires adequate facilities of proper size and configuration in which to receive, checkout, maintain, test, evaluate and store the missiles, components, and support equipment within the weapons storage area (WSA). Upgrade of convoy routes to accommodate the new ALCM munitions lift trailer is required. Modify mission planning area to house new computerized mission data preparation system.

Current situation.—Existing facilities are not adequate to beddown this new weapons system. The existing missile maintenance shop is too small to serve as a maintenance shop for ALCM and cannot be economically modified. Other munitions maintenance facilities within the WSA are not configured properly to support maintenance concepts required by the new mission. The existing storage igloos are too small to house missile loaded pylons. The convoy routes are not constructed to a sufficient strength to support ALCM convoy operations and the mission planning areas do not have adequate space to house the new ALCM mission data preparation system.

Impact if not provided.—The deployment of this vital strategic weapon system could not be accommplished in a timely manner nor in consonance with missile delivery and aircraft modification schedules. This could seriously impact the defense and security of the United States.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Air-launched cruise missile (ALCM) facilities	LS			$18,141
Integrated maintenance facilities	LS			(5,663)
Storage igloos	LS			(8,483)
Inert weapons storage facilities	LS			(1,251)
Munitions and support equipment shop	LS			(1,040)
Mission data systems	LS			(186)
Road upgrade	LS			(1,518)
Subtotal				18,141
Contingency (5 percent)				907
Total, contract cost				19,048
Supervision, inspection, and overhead (5 percent)				952
Total, request				20,000

Description of proposed construction.—

Integrated maintenance facility.—Concrete foundations, floor and roof slabs, and walls; reinforced concrete frame. Includes space for missile maintenance, surveillance and inspection, and missile systems handling and testing; administration, supply training, technical library, crew ready rooms, support and utilities.

Storage igloos.—Concrete/steel arch igloos with concrete floor slab and foundations, double steel door, and earth cover. All structural and electrical work required to provide safe and secure weapons storage area Includes roads, sensor system support, security lighting, and facility hardening. Necessary support and utilities. Remaining deficiency will be constructed in a future military construction program.

Inert weapons storage facility.—Pre-engineered metal building; concrete foundations and floor slab; metal skin, and structural steel frame and roof system. Includes weapon system shipping, receiving and transfer areas; weapon system crating, uncrating and storage space; monorail; necessary support and utilities.

Munitions and support equipment shop.—Concrete foundations and floor slab; structural steel frame and roof system. Includes maintenance space for trailers, pylon and associated weapon system equipment; tool crib, storage, wash bay, administration, support and utilities.

Mission data system.—Reinforced concrete foundations, floor and roof slabs and walls. Includes space for weapon system data processing equipment, storage and administration. Necessary support and utilities.

Road upgrade.—Construct new primary convoy route and upgrade existing secondary route with Portland cement or asphaltic concrete pavement capable of supporting the new trailer used for transporting the Air Launched Cruise Missile (ALCM). Includes modifications to the security fence and entrance to the weapons storage area to facilitate convoy movements into and out of the area. Necessary utilities and support.

Requirement	Required	Adequate	Substandard
Integrated maintenance facility (square feet)	32,400	0	8,270
Storage igloos (each)	11	0	0
Inert weapons storage facility (square feet)	8,400	0	0
Munitions and support equipment shop (square feet)	13,500	7,000	9
Mission data facility (square feet)	2,173	1,754	410
Road (linear feet)	8,928	0	1,700

Project.—Provides for the construction and modification of facilities required to house and maintain the Air Launched Cruise Missile weapons system.

Requirement.—The ALCM system requires adequate facilities of proper size and configuration in which to receive check out, maintain, test, evaluate and store the missiles, components, and support equipment within the weapons storage area (WSA). Upgrade of convoy routes to accommodate the new ALCM munitions lift trailer is required. Modify mission planning area to house new computerized mission data preparation system.

Current situation.—Existing facilities are not adequate to beddown this new weapons system. The existing missile maintenance shop is too small to serve as a maintenance shop for ALCM and cannot be economically modified. Other munitions maintenance facilities within the WSA are not configured properly to support maintenance concepts required by the new mission. The existing storage igloos are too small to house missile loaded pylons. The convoy routes are not constructed to a sufficient strength to support ALCM convoy operations and the mission planning areas do not have adequate space to house the new ALCM mission data preparation system.

Impact if not provided.—The deployment of this vital strategic weapon system could not be accomplished in a timely manner nor in consonance with missile delivery and aircraft modification schedules. This could seriously impact the defense and security of the United States.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Air-launched cruise missile (ALCM) facilities—Phase I	LS			$14,558
Intergrated maintenance facilities	LS			(8,070)
Storage igloos and site preparation	LS			(4,687)
Inert weapons storage facilities	LS			(1,435)
Mission data systems	LS			(366)
Subtotal				14,558
Contingency (5 percent)				728
Total, contract cost				15,286
Supervision, inspection, and overhead (5 percent)				764
Total, request				16,050

Description of proposed construction.—

Integrated maintenance facility.—Concrete foundations, floor and roof slabs, and walls; reinforced concrete frame. Includes space for missile maintenance and missile systems handling and testing; administration, supply, training, technical library, crew ready rooms, support and utilities.

Storage igloos.—Concrete/steel arch igloos with concrete floor slab and foundations, double steel door, and earth cover. All structural and electrical work required to provide safe and secure weapons storage area. Includes roads, sensor system support, security lighting and facility hardening. Necessary support and utilities. Remaining deficiency will be constructed in a future military construction program.

Inert weapons storage facility.—Pre-engineered metal building; concrete foundations and floor slab; metal skin; and structural steel frame and roof system. Includes weapon system shipping, receiving and transfer areas; weapon system crating, uncrating and storage space; monorail; necessary support and utilities.

Mission data system.—Reinforced concrete foundations, floor and roof slabs and walls. Includes space for weapon system data processing equipment, storage and administration. Necessary support and utilities. Remaining deficiency will be constructed in a future military construction program.

Requirement	Required	Adequate	Substandard
Integrated maintenance facility (square feet)	67,000	0	14,167
Storage igloos (each)	20	0	0
Inert weapons storage facility (square feet)	15,300	0	3,268
Mission data facility (square feet)	13,500	10,175	12,519

Project.—Provides for the construction and modification of facilities required to house and maintain the Air Launched Cruise Missile weapons system.

Requirement.—The ALCM system requires adequate facilities of proper size and configuration in which to receive, checkout, maintain, test, evaluate and store missiles, components, and support equipment within the weapons storage area (WSA). Modify mission planning area to house new computerized mission data preparation system.

Current situation.—Existing facilities are not adequate to beddown this new weapons system. The existing missile maintenance shop is too small to serve as a maintenance shop for ALCM and cannot be economically modified. Other munitions maintenance facilities within the WSA are not configured properly to support maintenance concepts required by the new mission. The existing storage igloos are too small to house missile loaded pylons. The mission planning area does not have adequate space to house the new ALCM mission data preparation system.

Impact if not provided.—The deployment of this vital strategic weapon system could not be accomplished in a timely manner nor in consonance with missile delivery and aircraft modification schedules. This could seriously impact the defense and security of the United States.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Short-range attack missile (SRAM) facilities	LS			$6,893
Missile assembly shop	LS			(2,758)
Storage igloos	LS			(2,097)
Munitions and support equipment shop	LS			(1,556)
Surveillance and inspection shop	LS			(243)
Add to and alter various support facilities	LS			(239)
Subtotal				6,893
Contingency (5 percent)				345
Total, contract cost				7,238
Supervision, inspection, and overhead (5 percent)				362
Total, request				7,600

Description of proposed construction.—

Missile assembly shop.—Reinforced concrete foundations, floor and roof slabs; and either reinforced concrete or masonry wall panels. Includes space for testing, checkout, fault-isolation, and maintenance of weapon system equipment, ground and aircraft equipment; and loading and unloading area for weapon system launcher and pylon. Also includes administration, technical library; and operation and ready rooms. Necessary support and utilities. Air Conditioning—25 Tons.

Storage igloos.—Concrete steel arch igloos with concrete floor slab and foundations, double steel doors, and earth cover. All structural and electrical alterations to provide safe and secure weapons storage area. Includes roads, sensor system support, motor generator, security lighting, and facility hardening. Necessary support and utilities.

Munitions and support equipment shop.—Concrete foundations and floor slab; masonry walls, structural steel frame and roof system. Includes area for maintenance, loading checkout, open storage, tool crib, wash rack, steam cleaning, administration, operations, training and testing. Necessary support and utilities. Air Conditioning 40 Tons.

Surveillance and inspection shop addition.—Concrete foundations and floor slab, structured steel frame and roof system. Includes space for weapons system inspection, assembly, checkout and maintenance. Necessary support and utilities. Air Conditioning—15 Tons.

Add to and alter various support facilities.—Concrete foundations and floor slab, masonry walls and structural steel roof system. All structural, electrical and mechanical alterations required to provide efficient and functional weapons system support facilities. Includes aircraft general purpose shop addition for aircraft environmental control unit run-up; avionics shop alteration for maintenance of aircraft communications, electronic countermeasures, navigation and fire control systems; and target intelligence training facility alteration for automatic data processing keypunch and tapes and mission planning activities. Also includes administration, necessary support and utilities. Air Conditioning 20 Tons.

Requirement	Required	Adequate	Substandard
Missile assembly shop (square feet)	13,578	0	0
Storage igloos (each) (square feet)	6	0	4
Munitions and support equipment shop (square feet)	58,654	35,342	0
Surveillance and inspection shop (square feet)	9,980	7,628	0
Various support facilities (square feet)	111,918	86,462	0

Project.—Provides for the construction and modification of facilities required to house and maintain the Short Range Attack Missile (SRAM) weapons system.

Requirement.—The SRAM requires adequate facilities in which to store and maintain missile assets within the existing weapons storage area (WSA). Construct new and modify existing flightline facilities required to support SRAM operations and support equipment maintenance.

Current situation.—Existing facilities are not available to adequately beddown this weapons system. No missile maintenance shop presently exists. The existing storage igloos are fully used, thus no storage space is available to house the additional SRAM assets. The mission planning area is too small to accommodate the mission planning associated with SRAM. Adequate facilities do not exist to accomplish the support equipment maintenance activities or the SRAM carrier aircraft maintenance requirements.

Impact if not provided.—SRAM assets could not be relocated to this base, thus preventing scheduled ALCM beddown at other locations from occurring and possibly jeopardizing United States security.

PROJECTS—SPECIFIC

Question. Is this all one design contract or separate design contracts?

Answer. Each of the four ALCM projects (at Ellsworth, Grand Forks, Griffiss and Wurtsmith) have separate design contracts. The one SRAM project at Dyess is being accomplished by inhouse Corps of Engineers personnel.

TACTICAL AIR COMMAND, VARIOUS LOCATIONS

a. Question. Provide separate 1391's for each site involved?

Answer. As announced on 5 February 1980, only one location, Davis-Monthan AFB, Arizona, is involved. A revised 1391, reflecting construction requirements at that location, is attached.

b. Question. Why is design starting so late?

Answer. The design is starting late because a final basing decision was not made until late January 1980. In order to avoid possible design breakage costs, the Air Force decided not to issue design instructions until the basing decision was made and announced.

COST ESTIMATES

Item	U/M	Quantity	Unit cost	Cost (thousands)
Ground-launched cruise missile (GLCM) training facilities	LS			$2,320
Training facilities alterations	LS			(1,400)
Security police operations facility	SF	11,000	$83.65	(920)
Supporting facilities				583
Utilities	LS			(310)
Security fencing	LS			(45)
Roads, parking, and walks	LS			(68)
Site improvements	LS			(100)
Seismic	LS			(60)
Subtotal				2,903
Contingency (5 percent)				145
Total, contract cost				3,048
Supervision, inspection, and overhead (5 percent)				152
Total, request				3,200

Description of proposed construction.—All structural, electrical, and mechanical alterations to provide adequate training facilities and utilities support. Area includes classrooms, equipment training areas, administrative support areas, equipment maintenance areas and latrines. Construct a security police operations facility with concrete foundation and floor slab, masonry walls, and built-up roof. Area includes a control center, scheduling and dispatch office, command function area, administration offices, desk sergeant, space for detention of prisoners, armory, and latrines. Vehicle parking and required support facilities. Air conditioning—80 tons.

Requirement.—78,954 SF; Adequate: 0; Substandard: 67,954 SF.

Project.—Alter five facilities to adequately beddown one GLCM Tactical Missile Training Squadron (TMTS). Construct a security police operations facility to replace a facility that will be altered for the TMTS.

Requirement.—Properly sized and configured facilities are necessary to conduct the unique, specialized training that must be given to operations and maintenance personnel prior to their assignment to GLCM operational units. These personnel must be trained in the command, control, and launch of GLCM and in the maintenance of missiles, launch control centers, transporter-erector-launcher vehicles and other unique support equipment. Training will be accomplished by classroom instruction, training mock-ups and simulators, hands-on training, and deployment exercises. A properly sized and configured facility is required for the security police operations function, including a central security control center for weapons system security operations.

DAVIS-MONTHAN AIR FORCE BASE, ARIZ., GROUND LAUNCHED CRUISE MISSILE (GLCM) TRAINING FACILITIES

Current situation.—Five existing facilities have been designed for use by the GLCM TMTS. These facilities were formerly a small storage facility, a field training detachment facility, a small maintenance shop, an aircraft maintenance hangar and shops, and a SAC alert facility. These facilities must be altered to provide adequate space for GLCM unique training requirements and associated equipment. The security police operations function is currently located on the bottom floor of one of these facilities and must be relocated. No other existing facilities are available to accommodate these functions.

Impact if not provided.—Adequate training in the operations and maintenance of GLCM cannot be completed. This, in turn, would lead to unacceptable delays in providing qualified personnel to GLCM operational units and could delay initial operating capability dates for those units.

UPGRADE POWERPLANT, CLARK AIR BASE, PHILIPPINES

a. Question. Have you looked at a total energy system here?

Answer. No, sir. The existing equipment is too decrepit, dispersed, and mismatched to be able to economically apply a total energy system. In any case, we have no use at present for the waste heat. If an economical way is found in the future to use the waste heat for additional electrical generation, we will look into total energy.

b. Question. Where do you get your heating and cooling?

b. Answer. There is little heating at Clark. With few exceptions, what little heat is required is obtained by reverse cycling the air conditioning units. All cooling is electric.

Question. Discuss the other phases and total costs.

Answer. The planned total program will upgrade the existing substandard power plant by replacing unreliable generators/equipment in separate buildings with modern gear in one building. Ultimately up to a 50,000 KW plant with ten 5,000 KW generators will replace the existing plant. Scope and timing of follow-on phases will depend on progress made to improve commercial power supply. If the planned total program must be implemented the total additional cost would be about $24 million.

ALTER AIRCRAFT SHELTERS, OSAN AIR BASE, KOREA

a. Question. When and by whom were the original shelters built?

Answer. The 59 shelters at Osan were built with fiscal year 1968 Supplemental Funds. The Air Force's construction agent was the Corps of Engineers. Actual construction was accomplished by various Korean construction companies. All construction was completed by September 1970.

b. Question. How hard are the existing shelters?

Answer. There is a minimum of 18 inches of 3,200 pounds per square inch concrete covering the shelter. The shelters offer effective protection against light weaponry, napalm, near misses by most conventional bombs, and nuclear overpressure.

c. Question. Why have you decided at this point that you need doors?

Answer. It is our intent to fully protect all forward deployed tactical aircraft. We have wanted these doors for some time, but budgeting constraints have prevented our programming them until now. We now perceive a greater threat in this area, and do not feel we should delay any longer.

d. Question. What munitions are you protecting against?

Answer. A highly specific answer would be classified. In general terms, the doors will offer protection which we could quantify as complete or substantial against most weapons known to be in the North Korean tactical air inventory. This includes small arms, aircraft cannon, rockets, bombs up to 500 pounds, and napalm. In some cases we can expect damage to the doors. They are designed so they can be pulled open even when damaged. The important thing is that all or most of our aircraft would survive at least the first strike of a surprise attack until we could get our airplanes into the air.

GYMNASIUM CAMP NEW AMSTERDAM AB, THE NETHERLANDS

Question. The planned facility seems quite large for the population supported. Justify.

Answer. The standard Air Force gymnasium for a base with this population is 25,800 square feet. This project and the existing 2,348 square foot sauna and weight room will provide 1,000 sq feet less than the standard or 24,809 square feet. The lack of a suitable facility for physical fitness and recreation at this location has a negative impact on our people assigned here and this project will greatly increase morale and fitness.

MINIMUM ESSENTIAL FACILITIES, VARIOUS LOCATIONS

Question. Where is the money to be spent?

Answer. At Karup Air Base Denmark

Question. Why don't you "assign" the forces to NATO to make this work NATO eligible?

Answer. Some of our forces must be kept out of the assigned category in order to maintain the flexibility to use the forces in support of a contingency in another part of the world. These forces would be used in Europe if that is where the contingency arose and would need the minimum essential facilities required for sortie generation.

GLCM SUPPORT FACILITIES, VARIOUS LOCATIONS

Question. Provide for the location of the three flights and a cost estimate for each site.

Answer. The three flights will be at one location. The negotiations with the host nation are not yet completed for this location so that the site cannot be announced until the host gives final approval. We expect that approval imminently. The $19.1 million in this program is for operational facilities at the one location. We will program any additional operational facilities required in the NATO infrastructure program. We will program required user nation responsibility base operating support facilities such as unaccompanied personnel housing and dining halls starting in the fiscal year 1982 MILCON program.

Question. Have you coordinated the criteria with NATO to be sure that the funds can be recouped?

Answer. We are processing documentation to NATO and conducting negotiations with NATO and SHAPE staff members to identify requirements and include projects in the infrastructure program. With the exception of the GLCM shelter, the operational facilities required are included within existing criteria and based on operational concepts and the threat we are confident that NATO will accept the cost over existing criteria.

Question. Discuss the shelter requirement for this system. Will NATO pay for the shelter?

Answer. The basic GLCM unit is a flight consisting of sixteen missiles in four TELs and two LCCs. In peacetime a GLCM flight equipped with all up rounds is secured in hardened shelters on a main operating base. The hardened shelters are designed to withstand current and postulated [deleted]. Because this shelter is new it is not currently in NATO Infrastructure criteria and exceeds aircraft shelter criteria. Over the next few months, the Air Force will be presenting the justification to SHAPE for inclusion of the shelter in criteria. It is too early at this time to predict the outcome of these deliberations.

SPECIAL OPERATIONS FACILITIES, VARIOUS LOCATIONS

Question. What is the status of agreement with the host nation on this project?

Answer. [Deleted.]

[Whereupon at 3:10 p.m. the hearing was adjourned, subject to call of the Chair.]

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